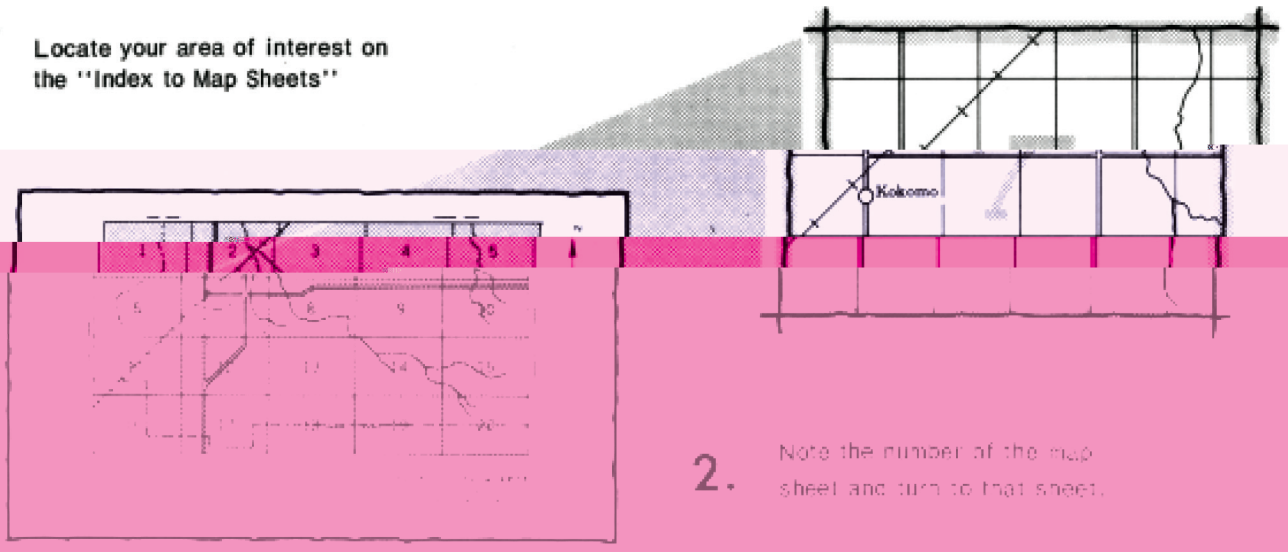
SOIL SURVEY OF
RANDOLPH COUNTY, ARKANSAS

UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE
IN COOPERATION WITH ARKANSAS AGRICULTURAL EXPERIMENT STATION

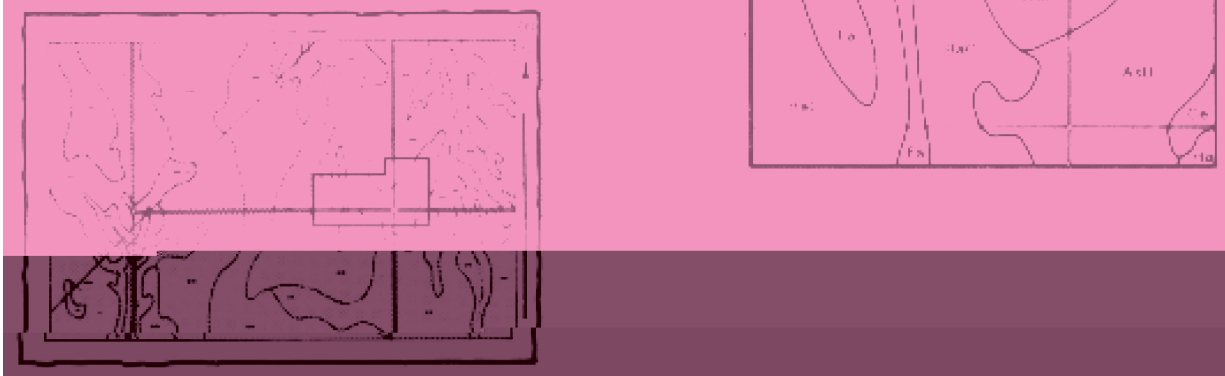
HOW TO USE

1. Locate your area of interest on the "Index to Map Sheets"

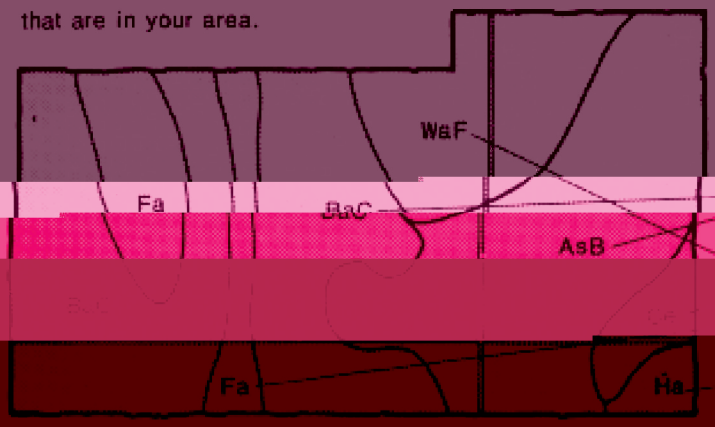


2. Note the number of the map sheet and turn to that sheet.

3. Locate your area of interest on the map sheet.



4. List the map unit symbols that are in your area.



Symbols

AsB
BaC
Ce
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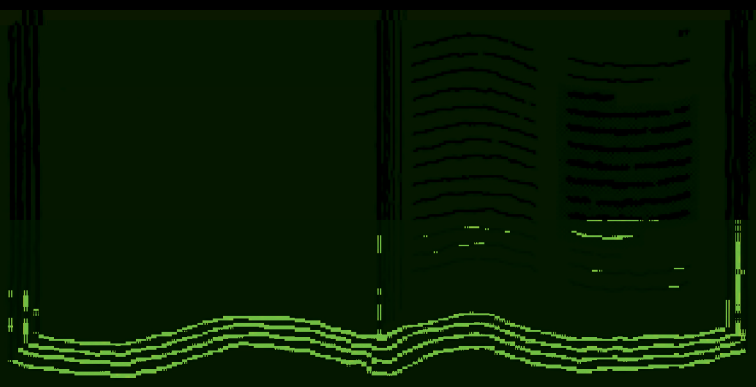
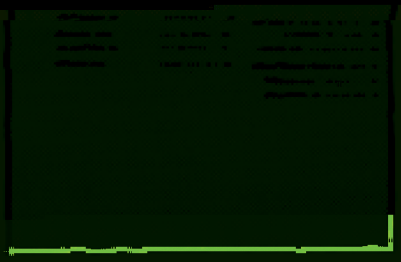
THIS SOIL SURVEY

5. Turn to "Index to Soil Map Units" which lists the name of each map unit and the page where that map unit is described.





6. See "Summary of Tables" (following the Contents) for location of additional data on a specific soil use.

"Contents" for parts of the publication that will meet your specific needs.

Consult

This is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and agencies of the States, usually the Agricultural Experiment Stations. In some surveys, other Federal and local agencies also contribute. The Soil Conservation Service has leadership for the Federal part of the National Cooperative Soil Survey. In line with Department of Agriculture policies, benefits of this program are available to all, regardless of race, color, national origin, sex, religion, marital status, or age.

Major fieldwork for this soil survey was completed in the period 1972-1975. Soil names and descriptions were approved in 1976. Unless otherwise indicated, statements in the publication refer to conditions in the survey area in 1976. This survey was made cooperatively by the Soil Conservation Service and the Arkansas Agricultural Experiment Station. It is part of the technical assistance furnished to the Randolph County Conservation District.

Soil maps in this survey may be copied without permission, but any enlargement of these maps could cause misunderstanding of the detail of mapping and result in erroneous interpretations. Enlarged maps do not show small areas of contrasting soils that could have been shown at a larger mapping scale.

Cover: Soybeans on McCrory fine sandy loam; one of the most productive row crops in the county.

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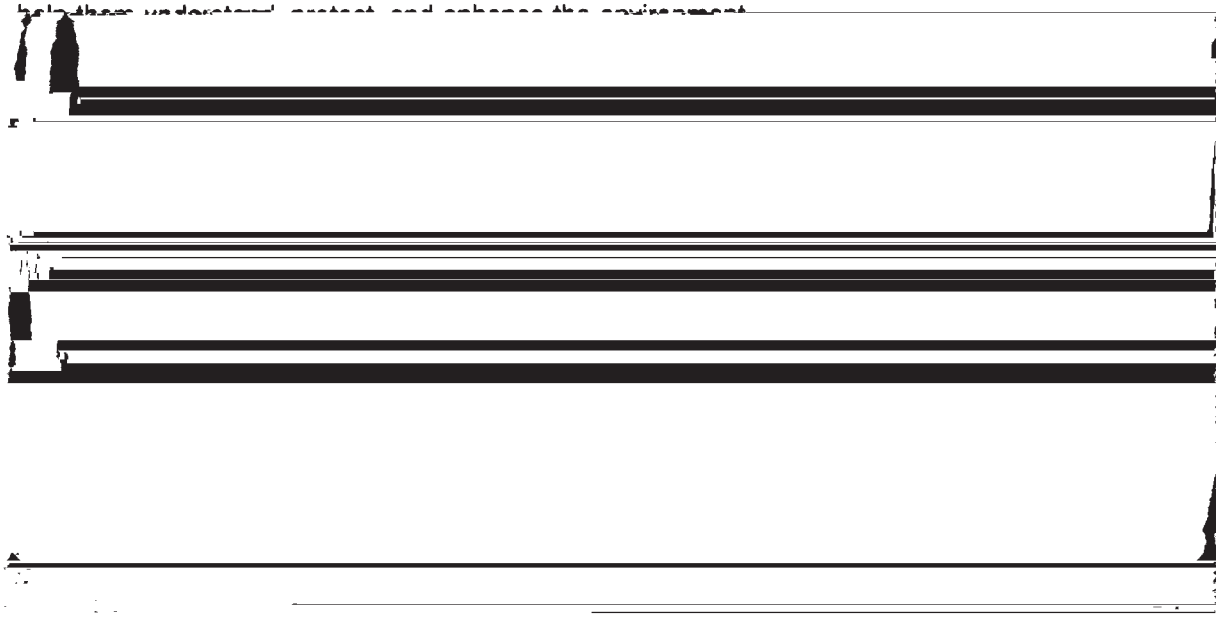
Foreword

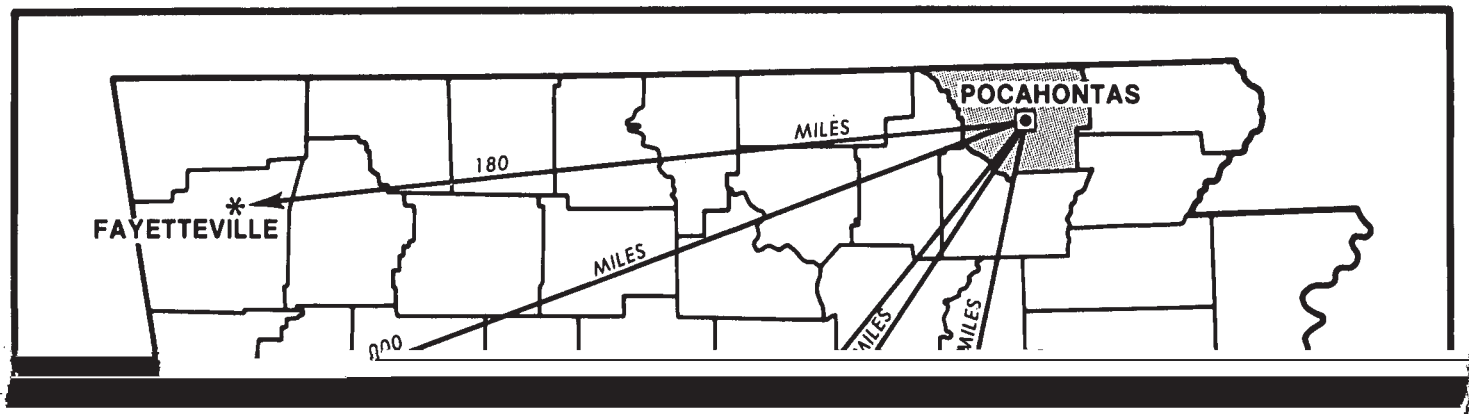
This Soil Survey contains much information useful in land-planning programs in Randolph County, Arkansas. Of prime importance are the predictions of soil behavior for selected land uses. Also highlighted are limitations or hazards to land uses that are inherent in the soil, improvements needed to overcome these limitations, and the impact that selected land uses will have on the environment.

This soil survey has been prepared for many different users. Farmers, ranchers, foresters, and agronomists can use it to determine the potential of the soil and the management practices required for food and fiber production. Planners, community officials, engineers, developers, builders, and homebuyers can use it to plan land use, select sites for construction, develop soil resources, or identify any special practices that may be needed to insure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the soil survey to help them understand, protect, and enhance the environment.



Great differences in soil properties can occur even within short distances. Soils may be seasonally wet or subject to flooding. They may be shallow to bedrock. They may be too unstable to be used as a foundation for buildings or roads. Very clayey or wet soils are poorly suited to septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map; the location of each kind of soil is shown on detailed soil maps. Each kind of soil in the survey area is described, and much information is given about each soil for specific uses. Additional information or assistance in using this publication can be obtained from the local office of the Soil Conservation Service or the Cooperative Extension Service.


POCAHONTAS
MILES
180
FAYETTEVILLE
MILES

SOIL SURVEY OF RANDOLPH COUNTY, ARKANSAS

Soils surveyed by James H. Brown, Clarence E. McFadden, and Warren A. Gore

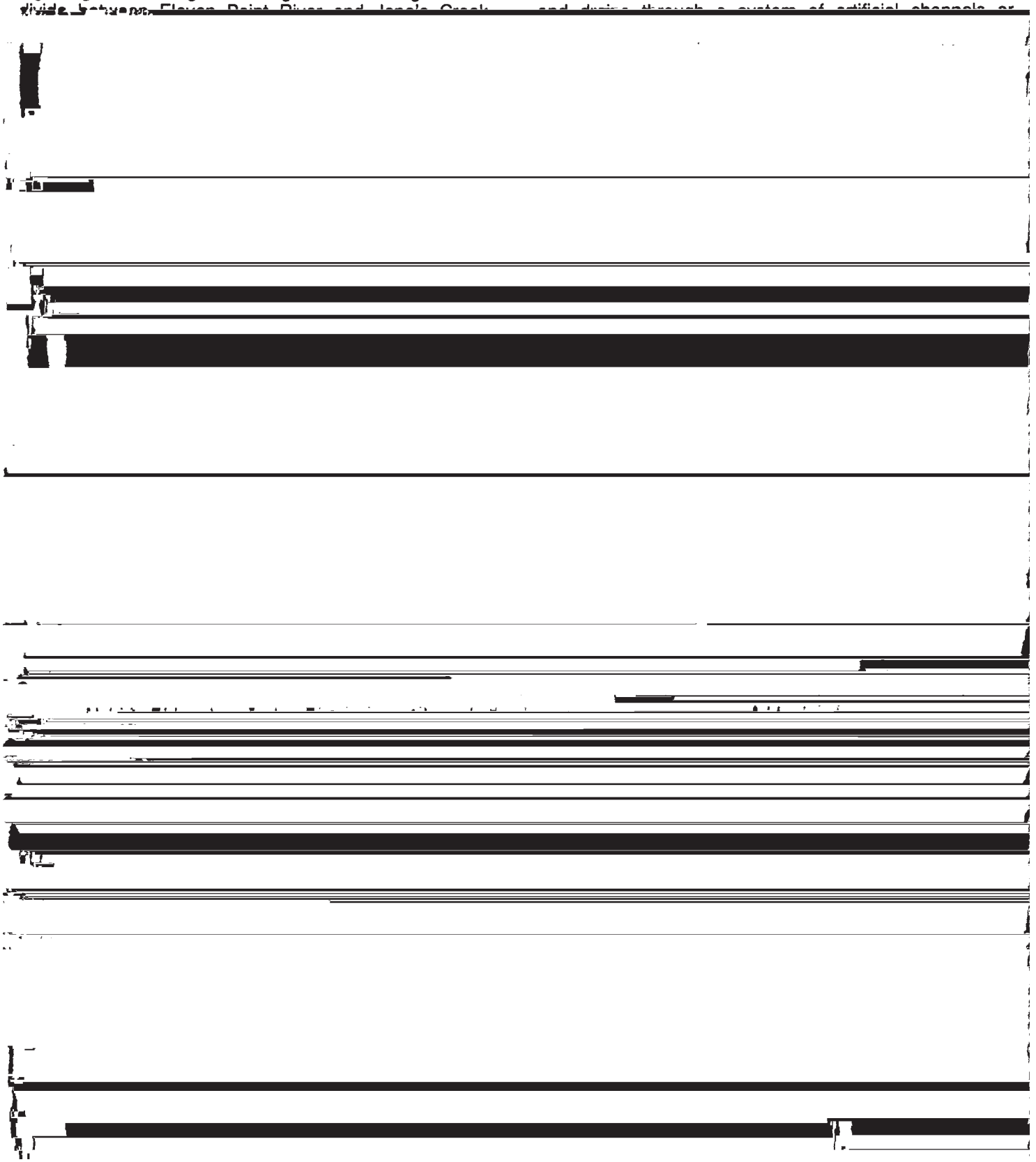
United States Department of Agriculture, Soil Conservation Service,
in cooperation with Arkansas Agricultural Experiment Station

RANDOLPH COUNTY is in the northeastern part of [redacted] top of natural levees near the town of Biggers in the [redacted]

[redacted] southward in the eastern part of the county. Current

high ridges. The longest and highest of the ridges is the divide between Eleven Point River and Jacks Creek.

more than 15 feet. Surface water collects in low places and during through a system of artificial channels or



cludes the growing season for most crops. In 2 years out of 10, the April to September rainfall is less than 18 inches. The heaviest 1-day rainfall during the period of record was 7.00 inches at Pocahontas on January 1, 1966. Thunderstorms number 57 each year, 22 of which occur in summer.

Average seasonal snowfall is 8 inches. The greatest snow depth at any one time during the period of record was 7 inches. On the average, 1 day has at least 1 inch of snow on the ground, but the number of such days varies greatly from year to year.

The average relative humidity in midafternoon is less than 60 percent. Humidity is higher at night in all seasons, and the average at dawn is about 85 percent. The percentage of possible sunshine is 72 in summer and 60 percent in winter. The prevailing wind is from the southwest. Average windspeed is highest, 10 miles per hour, in March.

How this survey was made

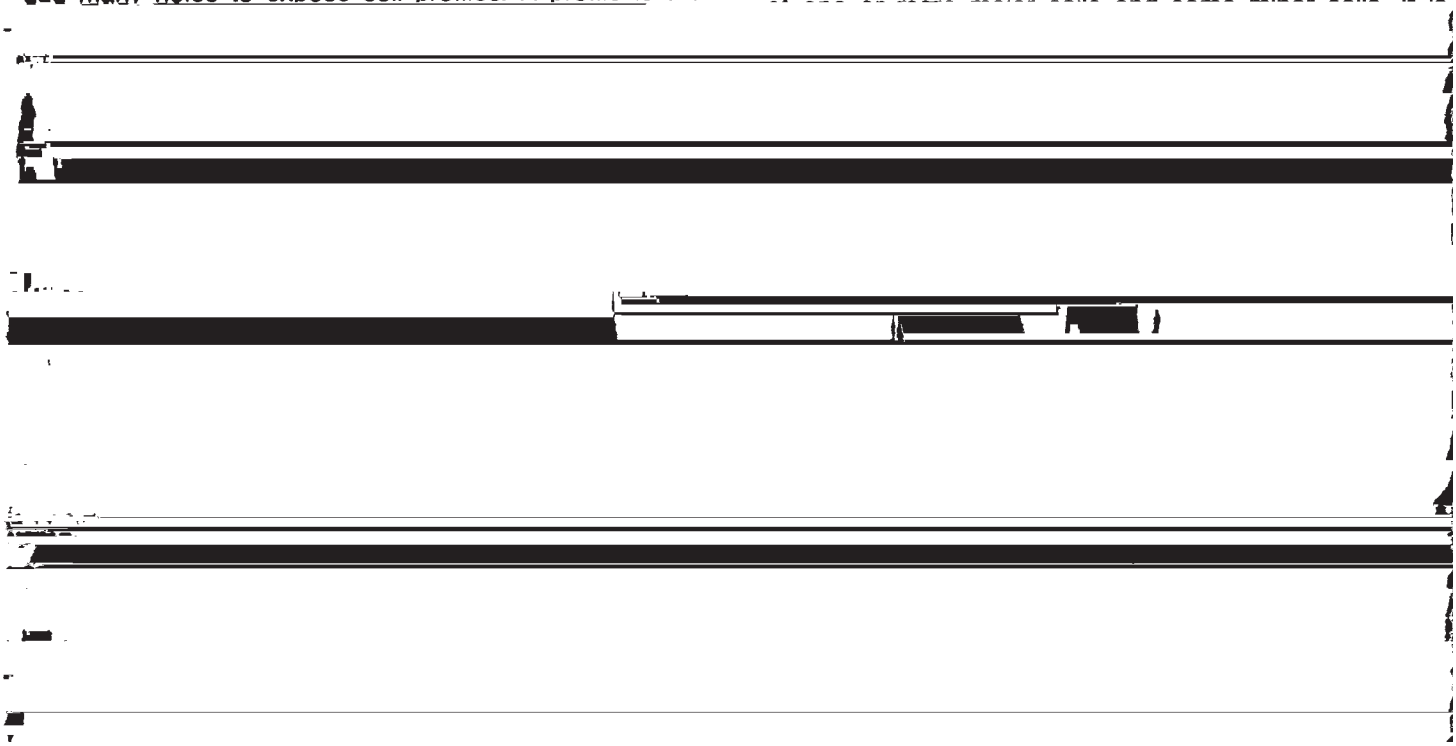
Soil scientists made this survey to learn what kinds of soil are in the survey area, where they are, and how they can be used. The soil scientists went into the area knowing they likely would locate many soils they already knew something about and perhaps identify some they had never seen before. They observed the steepness, length, and shape of slopes; the size of streams and the general pattern of drainage; the kinds of native plants or crops; the kinds of rock; and many facts about the soils. They dug many holes to expose soil profiles. A profile is the

While a soil survey is in progress, samples of soils are taken as needed for laboratory measurements and for engineering tests. The soils are field tested, and interpretations of their behavior are modified as necessary during the course of the survey. New interpretations are added to meet local needs, mainly through field observations of different kinds of soil in different uses under different levels of management. Also, data are assembled from other sources, such as test results, records, field experience, and information available from state and local specialists. For example, data on crop yields under defined practices are assembled from farm records and from field or plot experiments on the same kinds of soil.

But only part of a soil survey is done when the soils have been named, described, interpreted, and delineated on aerial photographs and when the laboratory data and other data have been assembled. The mass of detailed information then needs to be organized so that it is readily available to different groups of users, among them farmers, managers of rangeland and woodland, engineers, planners, developers and builders, homebuyers, and those seeking recreation.

General soil map for broad land use planning

The general soil map at the back of this publication shows, in color, map units that have a distinct pattern of soils and of relief and drainage. Each map unit is a unique natural landscape. Typically, a map unit consists



the soil limitations and the probability of soil problems persisting after such practices are used.

Each map unit is rated for cultivated farm crops, pasture, woodland, urban uses, and wildlife habitat development. Cultivated farm crops include soybeans, cotton, rice, grain sorghum, and wheat. Pasture refers to land that is in improved grasses, such as bermudagrass, bahiagrass, or tall fescue. Woodland refers to land that is managed for the production of trees crops, such as pine and certain hardwoods. Urban uses include residential, commercial, and industrial developments. Wildlife habitat refers to the development of food, cover, and water for various species that are native either to uplands or to wetland.

When properly drained, the Amagon-Dundee map unit has good potential for cultivated crops. The Hontas-Ashton-Razort map unit has poor potential for cultivated crops because of flooding.

The Loring map unit has good potential for pasture, as do most other map units in the county. However, the Gepp-Doniphan-Ventris unit has poor potential for pasture because of slope, Rock outcrop, and droughtiness.

There are no map units in the county that have poor potential for woodland. Most have good potential for woodland, as does the Captina-Gepp map unit, when properly managed. On others, such as the Brocket-Doniphan map unit, the use of equipment is limited because of surface gravel and high seedling mortality caused by

drained and moderately well drained soils have a cherty or stony loamy surface layer over a clayey subsoil. They formed in material weathered from cherty limestone, limestone, sandstone, siltstone, and some shale.

1. Gepp-Doniphan-Ventris

Deep and moderately deep, gently sloping to steep, well drained and moderately well drained soils that have a clayey subsoil and that formed in material weathered predominantly from cherty limestone

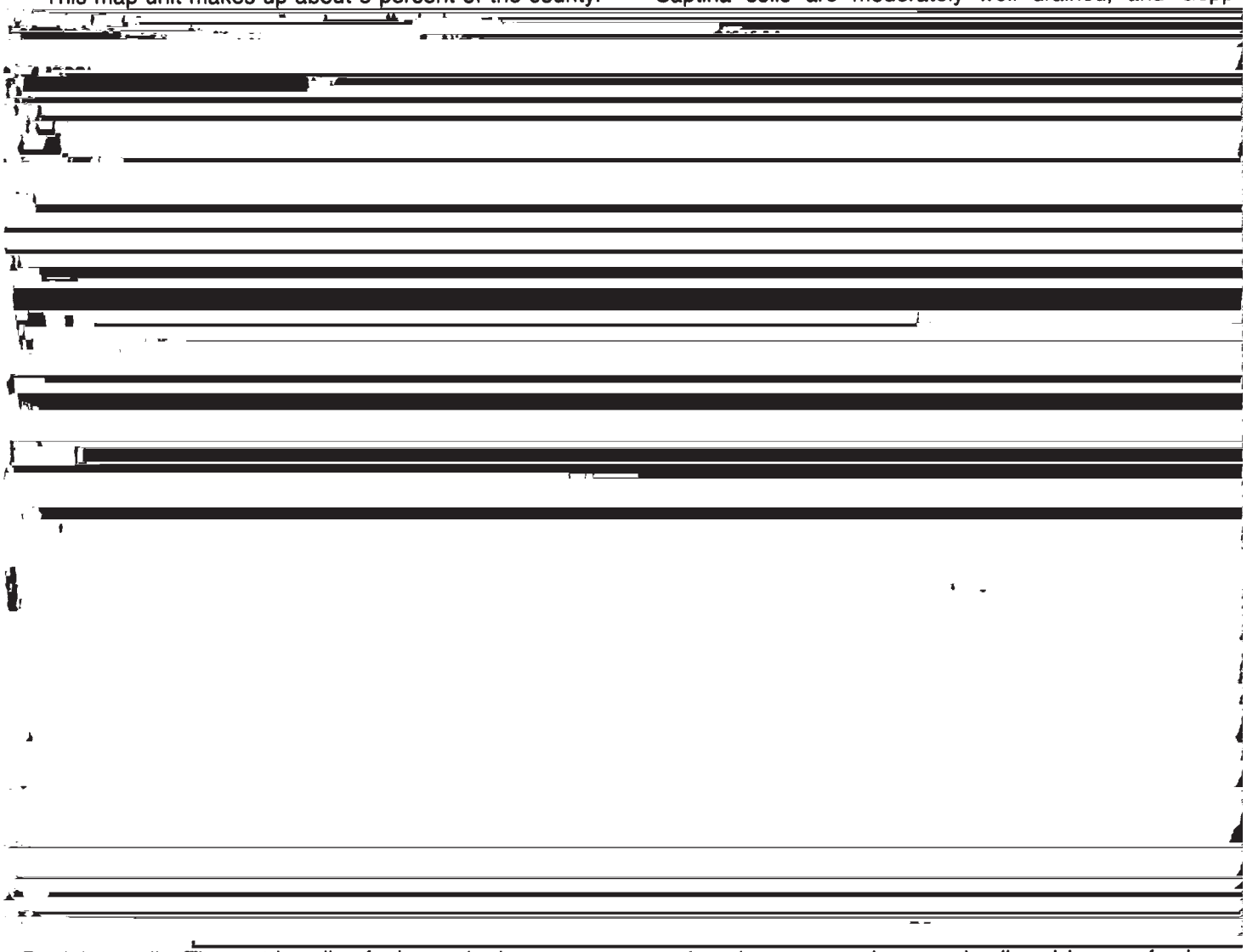
These gently sloping to steep soils are mainly in the western part of the county. A few areas of these soils are in the central and north-central part. The landscape is one of narrow valleys and adjacent moderately steep to steep hillsides and gently sloping to moderately sloping ridges.

This map unit makes up about 30 percent of the county. It is about 60 percent Gepp soils, 20 percent Doniphan soils, and 10 percent Ventris soils and Rock outcrop. The rest is soils of minor extent.

In most places, Gepp soils are on the steeper hilltops and hillsides. Doniphan soils are mainly on broad ridgetops, plateaus, and the upper parts of hillsides. Ventris soils are on the lower parts of hilltops, on hillsides, and on benches. Gepp and Doniphan soils are well drained, and Ventris soils are moderately well drained. Gepp and Doniphan soils are deep and have a cherty, loamy surface layer over a clayey subsoil. Ventris soils are moder-

landscape consists of broad ridgetops and moderately sloping hillsides and gently sloping hill crests.

This map unit makes up about 5 percent of the county.



Captina soils are on hill crests and sides of hills and valleys. Gepp soils are mainly on hilltops and hillsides. Captina soils are moderately well drained, and Gepp

Doniphan soils. The rest is soils of minor extent.

In most places, Brocket soils are on hill crests and upper parts of hillsides. Doniphan soils are mainly on broad ridgetops, plateaus, and the upper parts of hillsides. Brocket and Doniphan soils are well drained. Brocket soils have a gravelly fine sandy loam surface layer over a loamy subsoil. Doniphan soils have a cherty loam surface layer over a clayey subsoil.

The minor soils in this unit are the moderately well drained, nearly level to sloping Captina soils on uplands and stream terraces; the well drained, steeper Gepp soils on hilltops and hillsides; and the somewhat excessively drained Clarksville soils at the higher elevations on ridgetops and adjacent side slopes.

This map unit is used mainly for pasture, but some large areas are used for woodland. Slope and surface

surface layer over a loamy subsoil and have a fragipan. Gepp soils have a very cherty silt loam surface layer over a clayey subsoil.

The minor soils in this unit are the well drained Brocket soils on hilltops and hillsides at lower elevations; the somewhat excessively drained Clarksville soils on ridgetops and adjacent side slopes at higher elevations; and the moderately well drained Ventris soils on the lower parts of hilltops, on hillsides, and on benches.

The map unit is used mainly for pasture, but a small acreage of the less sloping soil is used for cultivated crops. Runoff is rapid, and the hazard of erosion is very severe.

This map unit has fair to poor potential for cultivated crops and good potential for pasture. When properly managed, this unit has good potential for woodland.

Soils that formed in alluvial sediment on level to nearly level flood plains

6. Amagon-Dundee

Deep, level to nearly level, somewhat poorly drained

This map unit makes up about 5 percent of the county. It is about 40 percent Bosket soils and 30 percent Broseley soils. The rest is soils of minor extent.

In most places, Bosket soils are lower in elevation than Broseley soils. Bosket soils are well drained, and Broseley soils are somewhat excessively drained. Bosket soils have a fine sandy loam surface layer over a loamy subsoil. Broseley soils have a loamy fine sand surface layer and a thick loamy fine sand subsurface layer over a loamy subsoil.

The minor soils in this unit are the somewhat poorly drained Dundee soils and the poorly drained McCrory soils on lower parts of old natural levees, and the somewhat poorly drained Patterson soils in depressions on natural levees.

This map unit is used mainly for cultivated crops. All of the acreage has been cleared except a few areas that have been replanted in pecan orchards. If these soils have no vegetative cover in spring, soil blowing is a hazard. Most areas are droughty during summer.

This map unit has good potential for cultivated crops, pasture, and woodland. It has good potential for residential and other urban uses. Most limitations can be overcome by proper engineering design. The potential is fair for development of wildlife habitat.

8. McCrory-Patterson

Deep, level, somewhat poorly drained and poorly drained soils that have a loamy subsoil and that formed in loamy and sandy alluvial sediment

These level soils are in scattered, small bands in the southeastern quarter of the county. Areas of these soils are on broad flats, in depressions of natural levees, and

This map unit has good potential for cultivated crops, pasture, and woodland. Because wetness is a severe limitation that is so difficult or impractical to overcome, the potential is poor for residential and other urban uses. The potential is good for development of wetland wildlife.

Soils that formed in eolian and alluvial sediment on level flood plains and in slack-water areas characterized by broad flats and low terraces

Two map units are in this group. The soils in these units make up about 10 percent of the county. They are on the northern part of the flood plain and on the broad slack-water flats east of natural levees along Black River in areas of Southern Mississippi Valley alluvium. They are level, somewhat poorly drained and poorly drained, loamy and clayey soils. They formed in sediment of the Mississippi River and its local tributaries or such sediment capped by loess deposits. Because there are few significant natural drainageways, surface water stands for long periods or is removed through improved drainageways.

9. Kobel-Amagon

Deep, level, poorly drained soils that have a loamy or clayey subsoil and that formed in loamy and clayey alluvial sediment

These level soils are on the Black River flood plain in the eastern part of the county. They are on broad flats on the lower parts of old natural levees, in shallow depressions, and in backswamps.

When adequately drained, this map unit has good potential for cultivated crops and pasture. The potential is good for woodland. Wetness and very slow permeability are such severe limitations and so difficult to overcome that the potential is poor for residential and other urban uses. The potential is good for development of wetland wildlife habitat (fig. 3).

10. Crowley-Jackport

Deep, level, somewhat poorly drained and poorly drained soils that have a clayey subsoil and that formed in loamy and clayey alluvial sediment

These level soils are in the southeastern part of the

Preceding the name of each map unit is the symbol that identifies the soil on the detailed soil maps. Each soil description includes general facts about the soil and a brief description of the soil profile. In each description, the principal hazards and limitations are indicated, and the management concerns and practices needed are discussed.

The map units on the detailed soil maps represent an area on the landscape made up mostly of the soil or soils for which the unit is named. Most of the delineations shown on the detailed soil map are phases of soil series.

Soils that have profiles that are almost alike make up a *soil series*. Except for allowable differences in texture

Most mapped areas include places that have little or no soil material and support little or no vegetation. Such

This soil has good potential for cottonwood, cherrybark oak, Nuttall oak, and sweetgum. Wetness is the

Capability unit VIe-4, woodland suitability group 5c2, not in a pasture and hayland group.

3—Ashton silt loam, occasionally flooded. This deep, well drained, level soil is in long, narrow strips along major streams that drain upland areas. Slope is 0 to 1 percent. Individual areas range from 20 to 200 acres in size.

Typically, the surface layer is dark brown silt loam about 8 inches thick. The subsoil extends to a depth of 58 inches. The upper 28 inches is brown silt loam, and the lower part is brown, mottled silt loam. The underlying material is brown, mottled silt loam to a depth of 72 inches or more.

Included with this soil in mapping are a few small

Included with this soil in mapping are few small areas of Broseley, Dundee, McCrory, and Patterson soils. These soils make up about 10 percent of the map unit.

This soil is medium in natural fertility and organic-matter content. It is slightly acid to strongly acid throughout. Permeability is moderate, and available water capacity is medium. Tilth is easy to maintain.

This soil is used mainly for cultivated crops, and it has good potential for this use. The principal crops are cotton (fig. 7) and soybeans. Other suitable crops are winter small grain, grain sorghum, corn, peanuts; and truck crops, such as okra, green beans, potatoes, tomatoes, sweet corn, melons, and strawberries. Crops respond well to fertilization. If this soil does not have vegetative cover in spring, the hazard of soil blowing is moderate (fig. 8). This soil has good potential for pas-

grass, tall fescue, white clover, annual lespedeza, and sericea lespedeza. Crops respond well to fertilization.

This soil has no significant limitations for woodland. It has good potential for yellow-poplar, sweetgum, and shortleaf pine.

This soil has good potential for most urban uses. It has no significant limitations for septic tank absorption fields, dwellings, and industrial sites. Low strength is a moderate limitation for roads and streets but generally can be overcome by proper engineering design. Capability unit IIIe-2, woodland suitability group 3o7, pasture and hayland group 8A.

6—Brocket gravelly fine sandy loam, 8 to 12 percent slopes. This deep, well drained, moderately sloping soil is on crests and upper side slopes of hills. Individual channels. Slope is 0 to 3 percent. Individual areas range from about 20 to 400 acres in size.

Typically, the surface layer is brown loamy fine sand about 8 inches thick. The subsurface layer is dark yellowish brown loamy fine sand about 18 inches thick. The subsoil extends to a depth of 60 inches. It is dark brown sandy clay loam to a depth of about 34 inches; dark brown, mottled fine sandy loam to a depth of about 44 inches; and yellowish brown loamy fine sand to a depth of 60 inches. The underlying material is pale brown loamy fine sand to a depth of 72 inches or more.

Included with this soil in mapping are a few small areas of Bosket, McCrory, and Patterson soils. These soils make up about 15 percent of the map unit.

This soil is medium in natural fertility and in organic-matter content. It is medium acid or strongly acid

Captina soils but have a fine sandy loam surface layer. These soils make up about 20 percent of the map unit.

This soil is low in natural fertility and organic-matter content. The surface layer is slightly acid to strongly acid, and the subsoil is strongly acid or very strongly acid. Permeability is slow, and available water capacity is medium. Tilth is easy to maintain.

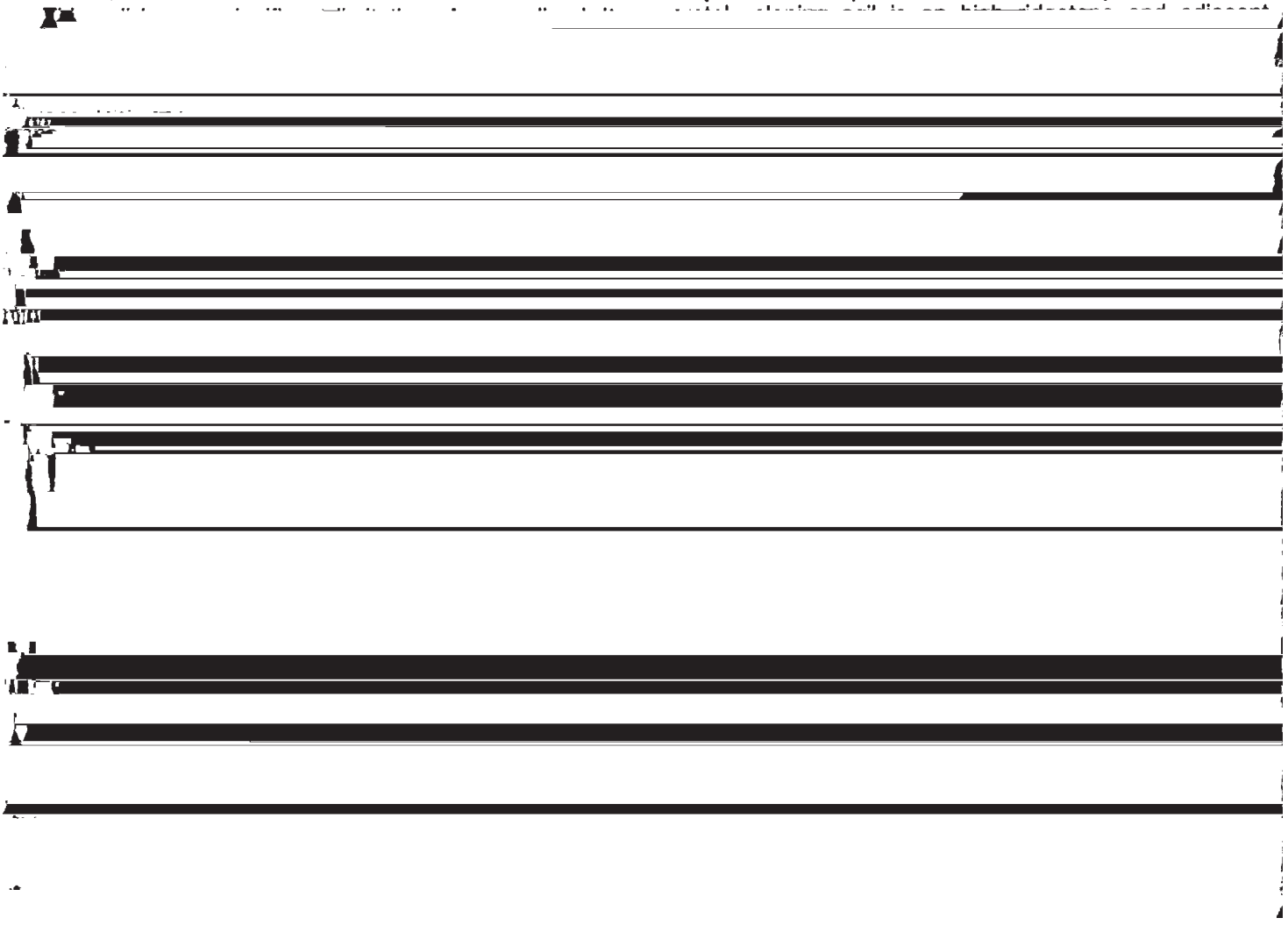
This map unit is used mainly for pasture. It has fair potential for cultivated crops. The principal crops are soybeans, grain sorghum, and winter small grain. Such truck crops as okra, strawberries, melons, potatoes, tomatoes, and green beans and such fruit crops as peaches, apples, pears, and grapes are also suitable. Runoff is medium, and the hazard of erosion is severe. With good management, including terracing and contour cultivation, clean tilled crops that leave large amounts of residue can be safely grown year after year on the milder slopes. This soil has good potential for pasture and no significant limitations. Adapted pasture plants include bahiagrass, bermudagrass, tall fescue, white clover, annual lespedeza, and sericea lespedeza. Crops respond well to fertilization.

This map unit is used mainly for pasture. It has poor potential for cultivated crops. Runoff is rapid, and the hazard of erosion is very severe. This soil has good potential for pasture and no significant limitations. Adapted pasture plants are bahiagrass, bermudagrass, tall fescue, white clover, annual lespedeza, and sericea lespedeza. Pasture plants respond well to fertilization.

This soil has no significant limitations for woodland. It has fair potential for shortleaf pine, southern red oak, and eastern redcedar.

This soil has poor potential for most urban uses. The slow permeability is a severe limitation for septic tank absorption fields and is difficult to overcome. Slope is a severe limitation for industrial sites, and the slope and low strength are moderate limitations for dwellings and roads and streets. These limitations generally can be overcome by proper engineering design. Capability unit IVe-1, woodland suitability group 4o7, pasture and hayland group 8A.

10—Clarksville cherty silt loam, 8 to 12 percent slopes. This deep, somewhat excessively drained, mod-



by proper engineering design. Capability unit VIs-1, woodland suitability group 4f7, pasture and hayland group 8G.

11—Clarksville cherty silt loam, 12 to 20 percent slopes. This deep, somewhat excessively drained, moderately steep soil is on high ridgetops and adjacent side slopes. Individual areas range from about 20 to 150 acres in size.

This soil is medium in natural fertility and low in organic-matter content. It is slightly acid to very strongly acid throughout. Permeability is very slow, and available water capacity is high. The seasonal high water table is within 12 inches of the surface late in winter and early in spring. Tilth is easy to maintain.

This map unit is used mainly for cultivated crops, and it has good potential for this use. The principal crops are soybeans and rice. Other suitable crops are grain sor-

This soil has fair potential for pasture. The main limitation is droughtiness. Adapted pasture plants are bahiagrass, bermudagrass, tall fescue, annual lespedeza, and sericea lespedeza.

This soil is used mainly for woodland and has no significant limitations. It has fair potential for shortleaf pine, loblolly pine, and eastern redcedar.

cherty, loamy material and in the underlying clayey material weathered from siltstone, cherty limestone, and shale. Gepp soils are on steeper sides of ridges and plateaus. They formed in a thin layer of cherty, loamy material and in the underlying clayey material weathered from chert limestone or limestone. Slope is 3 to 12 percent. Areas range from 80 to 560 acres in size.

redcedar; and Gepp soils have good potential for loblolly pine, white oak, and shortleaf pine.

This association has fair potential for most urban uses. Doniphan soils have severe limitations for dwellings, industrial sites, and roads and streets because of low strength and slope. Where slopes are more than 8 percent, they have a moderate limitation for septic tank absorption fields. These limitations generally can be

tions are difficult or impractical to overcome. Wetness and high shrink-swell potential are moderate limitations for dwellings, industrial sites, and roads and streets. These limitations generally can be overcome by proper engineering design. Capability unit IIw-1, woodland suitability group 2w5, pasture and hayland group 2B.

17—Gepp very cherty silt loam, 8 to 12 percent slopes. This deep, well drained, moderately sloping soil

28 inches, mottled, red clay to a depth of 53 inches, and mottled yellowish red clay to a depth of 70 inches or more.

Included with this soil in mapping are a few small areas of Brookt-Clarkeville-Doniphan and Ventrie soils.

the upper part of the subsoil is strongly acid or very

The deep, well drained Doniphan soils make up about 25 percent of this association. Typically, the surface layer is dark grayish brown gravelly silt loam about 8

are more difficult to overcome as the slope increases. Pasture and hayland group 8C; Gepp soils in capability unit VIe-2, woodland suitability group 3o7; Doniphan soils in capability unit VIs-1, woodland suitability group 4r2.

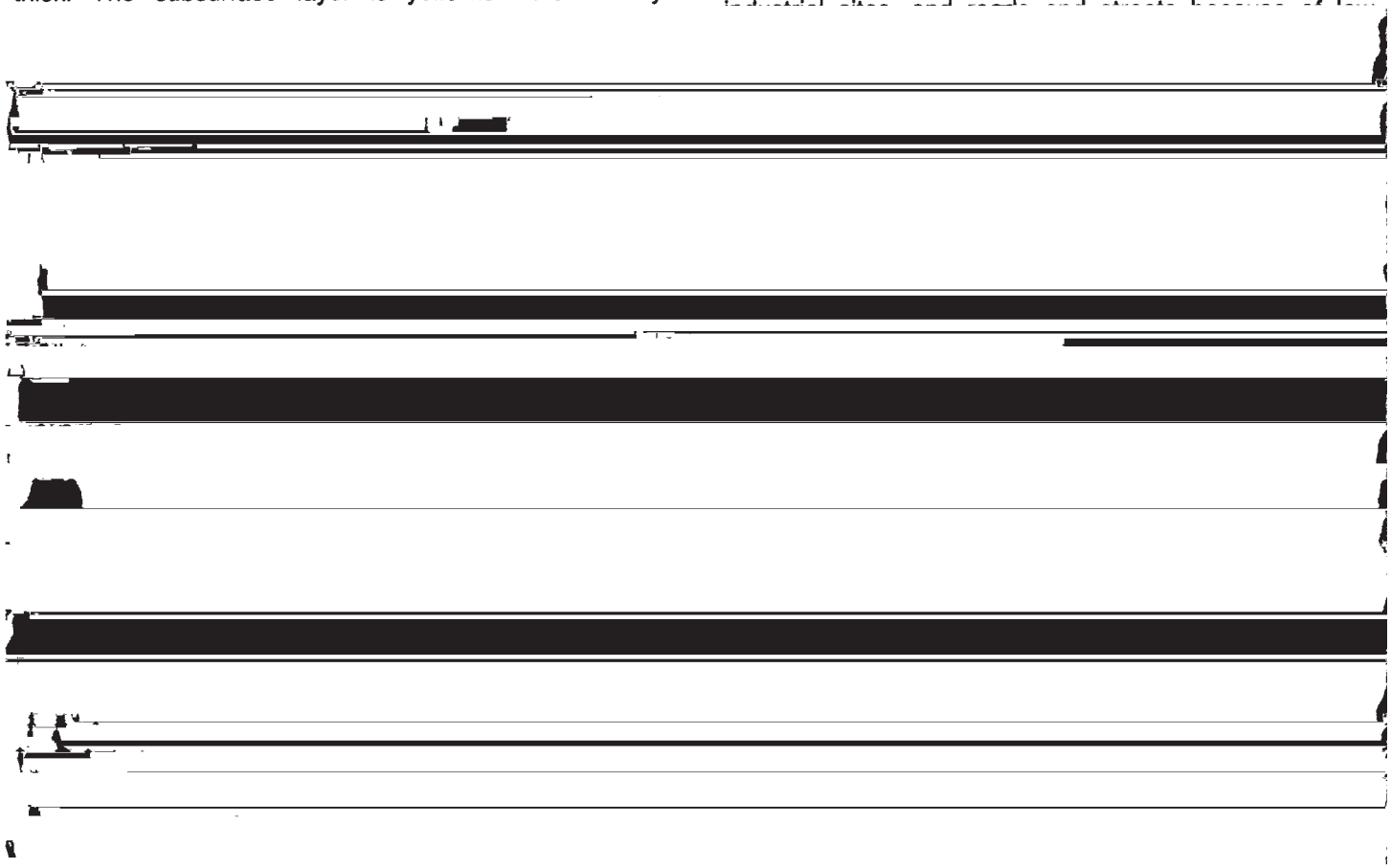
20—Gepp-Ventris association, rolling. This association consists of deep and moderately deep, well drained and moderately well drained soils on rolling side slopes, narrow ridges, and benches in a regular pattern on the landscape. Gepp soils are on upper parts of side slopes and on narrow ridges. They formed in a thin layer of cherty, loamy material and in the underlying clayey material weathered from cherty limestone or limestone. Ventris soils are on benches and less sloping hillsides. They formed in clayey material weathered from limestone or mixed limestone and shale. Slope is 12 to 20 percent. Mapped areas range from 80 to 600 acres in size.

The deep, well drained Gepp soils make up about 60 percent of this association. Typically, the surface layer is dark grayish brown very cherty silt loam about 1 inch thick. The subsurface layer is yellowish brown very percent. The included soils and Rock outcrop make up about 20 percent of this association.

This association is not suitable for cultivated crops and has poor potential for pasture. Slope, surface stones, chert fragments, and Rock outcrop severely restrict the use of equipment; and most of the soils are droughty. Pasture plants, however, respond well to fertilizer on Gepp soils, but respond poorly to fertilization on Ventris soils.

This association is used mainly for woodland. Gepp soils have good potential for loblolly pine, white oak, and shortleaf pine, but plant competition is a moderate limitation to management. Ventris soils have poor potential for shortleaf pine, loblolly pine, southern red oak, and eastern redcedar. Moderate seedling mortality and restricted use of equipment are the main limitations for Ventris soils.

This association has poor potential for most urban uses. Where slopes are less than 15 percent, Gepp soils have moderate limitations for septic tank absorption fields because of the moderate permeability and the slope. They also have moderate limitations for dwellings,



The deep, well drained Gepp soils make up about 55 percent of this association. Typically, the surface layer is dark grayish brown very cherty silt loam about 1 inch thick. The subsurface layer is yellowish brown very cherty silt loam about 6 inches thick. The subsoil is yellowish red silty clay loam to a depth of about 13 inches, red clay to a depth of about 28 inches, mottled, red clay to a depth of 53 inches, and mottled, yellowish red clay to a depth of 72 inches or more.

Gepp soils have moderate permeability and medium available water capacity. Natural fertility and organic-matter content are low. The surface layer and lower part of the subsoil are medium acid or strongly acid, and the upper part of the subsoil is strongly acid or very strongly acid.

The moderately deep, moderately well drained Ventris soils make up about 20 percent of this association. Typically, the surface layer is very dark grayish brown silt loam about 5 inches thick. The subsoil extends to a depth of 32 inches. The upper 9 inches is light olive brown, mottled silty clay; and the lower part is yellowish brown, mottled clay. Hard, undulating fractured limestone

tions are very difficult to overcome. Gepp soil in capability unit VIIe-1, woodland suitability group 3o7, pasture and hayland group 8B; Ventris soil in capability unit VIIs-2, woodland suitability group 5c2, pasture and hayland group 14C.

22—Hontas silt loam, frequently flooded. This deep, moderately well drained, level soil is on flood plains of creeks and rivers. Slope is 0 to 1 percent. Individual areas range from 20 acres to more than 200 acres.

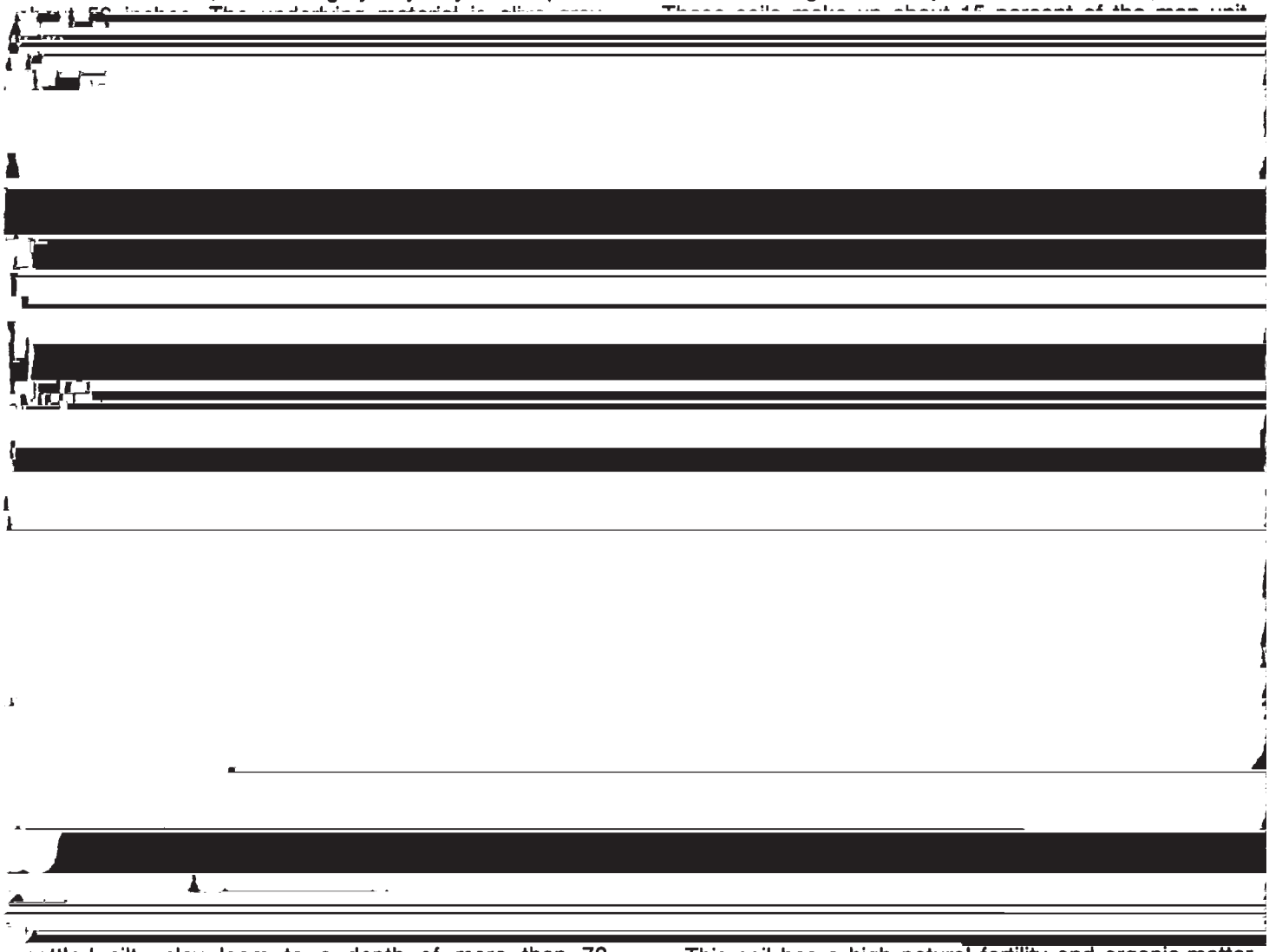
Typically, the surface layer is brown silt loam about 6 inches thick. The subsoil extends to a depth of 30 inches. The upper 8 inches is dark yellowish brown mottled silt loam, and the lower part is yellowish brown, mottled silt loam. The underlying material is grayish brown and gray, mottled silt loam and silty clay loam to a depth of about 72 inches or more.

Included with this soil in mapping are a few areas of Ashton and Razort soils. These soils make up about 15 percent of the map unit.

This soil is high in natural fertility and medium in organic matter content. It is medium acid to mildly alkaline

about 17 inches; grayish brown, mottled clay to a depth of about 48 inches; and olive gray silty clay to a depth of

Included with this soil in mapping are a few small areas of Amagon, Crowley, Dundee, and Jackport soils.



mottled silty clay loam to a depth of more than 72 inches.

Included with this soil in mapping are a few small areas of Crowley and Kobel soils. These soils make up about 10 percent of the map unit.

This soil is moderate in natural fertility and in organic-matter content. The surface and subsurface layers range from medium acid to very strongly acid, the subsoil is strongly acid or very strongly acid, and the underlying material ranges from mildly alkaline to slightly acid. Permeability is very slow, and available water capacity is high. The seasonal high water table is within 12 inches of the surface late in winter and early in spring. Tilth is somewhat difficult to maintain. The surface layer forms clods if it is plowed when too wet, and seedbed preparation is difficult.

This map unit is used mainly for cultivated crops, and it has good potential for this use. The principal crops are

This soil has a high natural fertility and organic-matter content. The surface layer ranges from neutral to strongly acid, and the subsoil and underlying material range from moderately acid to slightly acid. Permeability is very slow, and available water capacity is high. The seasonal high water table is within 12 inches of the surface late in winter and early in spring. Tilth is somewhat difficult to maintain. If plowed when it is too wet, the soil forms clods.

This map unit is used mainly for cultivated crops, and it has good potential for this use. The principal crops are soybeans and rice. Grain sorghum and cotton are other suitable crops. Crops respond well to fertilization. Excess water is a severe hazard, and farming operations are delayed several days after rain unless surface drains are installed. This soil has good potential for pasture. Adapted pasture plants include bermudagrass, tall fescue, and white clover. Wetness is the main limitation late in winter

This map unit is used mainly for pasture. It has fair potential for cultivated crops. The principal crops are soybeans, grain sorghum, and winter small grain. Such

This soil has no significant limitations for woodland. It has good potential for yellow-poplar, shortleaf pine, and southern red oak.

This soil has poor potential for urban uses. Wetness is a severe limitation for all urban uses. This limitation is

races. Individual areas range from about 15 to 100 acres.

woodland suitability group 3w6, pasture and hayland group 2B.

inches thick. The subsoil is yellowish red silty clay loam to a depth of about 36 inches; mottled, red silty clay loam to a depth of about 48 inches; and yellowish red,

[redacted]

the data presented, the potential of each soil for specified land uses can be determined, soil limitations to these land uses can be identified, and costly failures in houses and other structures, caused by unfavorable soil properties, can be avoided. A site where soil properties are favorable can be selected, or practices that will overcome the soil limitations can be planned.

Planners and others using the soil survey can evaluate the impact of specific land uses on the overall productivity of the survey area or other broad planning area and on the environment. Productivity and the environment are closely related to the nature of the soil. Plans should [illegible]

production technology to all cropland in the county. This survey can be used to facilitate the application of such technology.

Except for the Black River and Current River bottom lands, the soils in Randolph County are low in nitrogen, potassium, phosphorus, calcium, and organic matter. Many of the soils that are suitable for cultivation are erodible. In places, poor surface or internal drainage and the susceptibility to flooding are limitations.

Contour farming, terraces, and grassed waterways are needed on sloping soils that are used for clean-tilled crops. Proper arrangement of rows and suitable drainage are needed for dependable growth in wet areas.

[redacted]

phate and potash fertilizers and lime at rates based on soil test results.

The soils of Randolph County have been placed in pasture and hayland suitability groups. These groups are prepared to assist land users in the selection and management of suitable forage plants. The soils included in each group grow similar kinds of forage plants and require similar treatment and management. Forage production for one soil in the group is essentially the same as for other soils in the group when management and treatment are the same. The pasture and hayland suitability groups are identified in the description of each unit in the section, "Soil map for detailed planning."

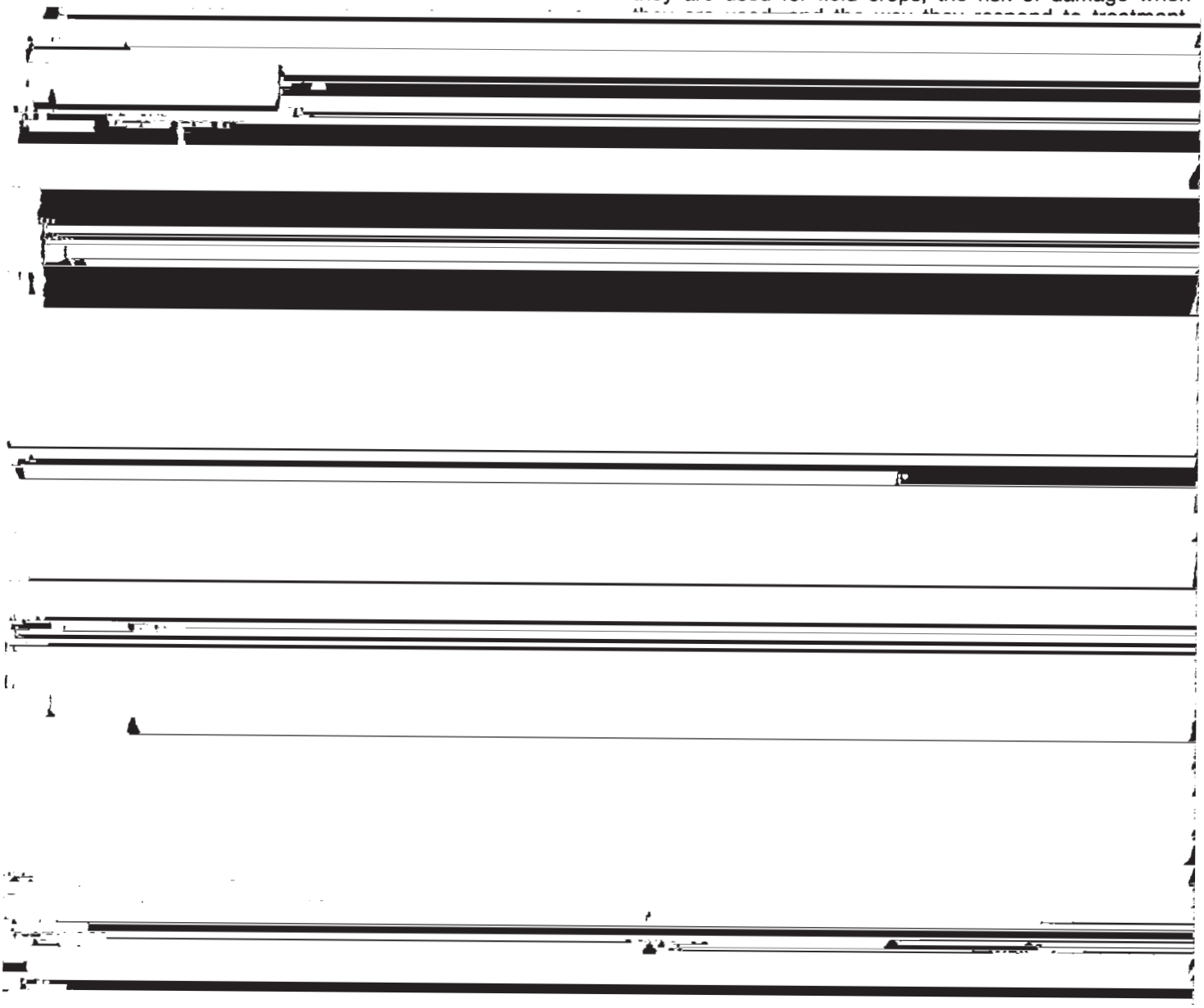
Yields per acre

The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 5 are grown in the survey area, but estimated yields are not included because the acreage of these crops is small. The local offices of the Soil Conservation Service and the Cooperative Extension Service can provide information about the management concerns and productivity of the soils for these crops.

Capability classes and subclasses

Capability classes and subclasses show, in a general way, the suitability of soils for most kinds of field crops. The soils are classed according to their limitations when they are used for field crops, the risk of damage when



shows that the main limitation is risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is too cold or too dry.

In class I there are no subclasses because the soils of this class have few limitations. Class V contains only the subclasses indicated by *w, s,* or *c* because the soils in class V are subject to little or no erosion, though they have other limitations that restrict their use to pasture, rangeland, woodland, wildlife habitat, or recreation.

[redacted]

each soil map unit in the section "Soil maps for detailed planning." Capability units are soil groups within the subclasses. The soils in one capability unit are enough alike to be suited to the same crops and pasture plants, to [redacted]

the upper part of the soil; *s*, sandy texture; *f*, high content of coarse fragments in the soil profile; and *r*, steep slopes. The letter *o* indicates insignificant limitations or restrictions. If a soil has more than one limitation, priority in placing the soil into a limitation class is in the following order: x, w, t, d, c, s, f, and r.

The third element in the symbol, a numeral, indicates the kind of trees for which the soils in the group are best suited and also indicates the severity of the hazard or limitation. The numerals 1, 2, and 3 indicate suitability for needleleaf trees, and limitations are, 1—slight; 2—moderate; 3—severe. The numerals 4, 5, and 6 indicate suitability for broadleaf trees, and limitations are, 4—slight; 5—moderate; 6—severe. The numerals 7, 8, and 9 indicate suitability for both needleleaf and broadleaf [redacted]

severe.

In table 6 the soils are also rated for a number of factors to be considered in management. *Slight, moderate,* and *severe* are used to indicate the degree of major

Trees to plant are those that are suitable for commercial wood production and that are suited to the soils.

Wildlife habitat

Roy A. Grizzell, Jr., biologist, Soil Conservation Service, helped prepare this section.

Soils directly affect the kind and amount of vegetation ations. Examples of grain and seed crops are corn and wheat.

Grasses and legumes are domestic perennial grasses and herbaceous legumes that are planted for wildlife food and cover. Major soil properties that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flood hazard, and slope.

shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. The availability of a dependable water supply is important if water areas are to be developed. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The kinds of wildlife habitat are briefly described in the following paragraphs.

Openland habitat consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. The kinds of wildlife attracted to these areas include bobwhite quail, meadowlark, and cottontail rabbit.

neering uses. As appropriate, these values can be applied to each major horizon of each soil or to the entire profile.

These factors of soil behavior affect construction and maintenance of roads, airport runways, pipelines, foundations for small buildings, ponds and small dams, irrigation projects, drainage systems, sewage and refuse disposal systems, and other engineering works. The ranges of values can be used to (1) select potential residential, commercial, industrial, and recreational areas; (2) make preliminary estimates pertinent to construction in a particular area; (3) evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; (4)

small commercial buildings, and local roads and streets are indicated in table 8. A *slight* limitation indicates that

The load supporting capacity and the stability of the soil as well as the quantity and workability of fill material

system to lower the seasonal water table can be installed or the size of the absorption field can be increased so that performance is satisfactory.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons have a nearly level floor and cut slopes or embankments of compacted soil material. Aerobic lagoons generally are designed to hold sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Soils that are very high in content of organic matter and those that have cobbles, stones, or boulders are not

tamination of ground water is a hazard where the seasonal high water table is above the level of the lagoon floor. In soils where the water table is seasonally high, seepage of ground water into the lagoon can seriously reduce the lagoon's capacity for liquid waste. Slope, depth to bedrock, and susceptibility to flooding also affect the suitability of sites for sewage lagoons or the cost of construction. Shear strength and permeability of compacted soil material affect the performance of embankments.

Sanitary landfill is a method of disposing of solid waste by placing refuse in successive layers either in excavated trenches or on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer

The soils selected for final cover of landfills should be suitable for growing plants. Of all the horizons, the A horizon in most soils has the best workability, more organic matter, and the best potential for growing plants. Thus, for either the area- or trench-type landfill, stockpiling material from the A horizon for use as the surface layer of the final cover is desirable.

If it is necessary to bring in soil material for daily or final cover, thickness of suitable soil material available and depth to a seasonal high water table in soils surrounding the sites should be evaluated. Other factors to be evaluated are those that affect reclamation of the borrow areas. These factors include slope, erodibility, and potential for plant growth.

Construction materials

The suitability of each soil as a source of roadfill, sand, gravel, and topsoil is indicated in table 10 by ratings of good, fair, or poor. The texture, thickness, and organic-matter content of each soil horizon are important factors in rating soils for use as construction material. Each soil is evaluated to the depth observed, generally about 6 feet.

Roadfill is soil material used in embankments for roads. Soils are evaluated as a source of roadfill for low embankments, which generally are less than 6 feet high and less exacting in design than high embankments. The ratings reflect the ease of excavating and working the

contain sizable quantities of sand or gravel. A soil rated *good* or *fair* has a layer of suitable material at least 3 feet thick, the top of which is within a depth of 6 feet. Coarse fragments of soft bedrock material, such as shale and siltstone, are not considered to be sand and gravel. Fine-grained soils are not suitable sources of sand and gravel.

The ratings do not take into account depth to the water table or other factors that affect excavation of the material. Descriptions of grain size, kinds of minerals, reaction, and stratification are given in the soil series descriptions and in table 13.

Topsoil is used in areas where vegetation is to be established and maintained. Suitability is affected mainly by the ease of working and spreading the soil material in preparing a seedbed and by the ability of the soil material to support plantlife. Also considered is the damage that can result at the area from which the topsoil is taken.

The ease of excavation is influenced by the thickness of suitable material, wetness, slope, and amount of stones. The ability of the soil to support plantlife is determined by texture, structure, and the amount of soluble salts or toxic substances. Organic matter in the A1 or Ap horizon greatly increases the absorption and retention of moisture and nutrients. Therefore, the soil material from these horizons should be carefully preserved for later use.

Soils rated *good* have at least 16 inches of friable loamy material at their surface. They are free of stones and cobbles, are low in content of gravel, and have gentle slopes. They are low in soluble salts that can restrict plant growth. They are naturally fertile or respond well to fertilizer. They are not so wet that excavation is difficult during most of the year.

Soils rated *fair* are loose sandy soils or firm loamy or clayey soils in which the suitable material is only 8 to 16 inches thick or soils that have appreciable amounts of gravel, stones, or soluble salt.

Soils rated *poor* are very sandy soils or very firm clayey soils; soils that have suitable layers less than 8 inches thick; soils that have large amounts of gravel, stones, or soluble salt; steep soils; and poorly drained soils.

Although a rating of *good* is not based entirely on high content of organic matter, a surface horizon is generally preferred for topsoil because of its organic-matter content. This horizon is designated as A1 or Ap in the soil series descriptions. The absorption and retention of moisture and nutrients for plant growth are greatly increased by organic matter.

Water management

Many soil properties and site features that affect water management practices have been identified in this soil survey. In table 11 the degree of soil limitation and soil and site features that affect use are indicated for each kind of soil. This information is significant in planning, installing, and maintaining water control structures.

Soil and site limitations are expressed as slight, moderate, and severe. *Slight* means that the soil properties and site features are generally favorable for the specified use and that any limitation is minor and easily overcome. *Moderate* means that some soil properties or site features are unfavorable for the specified use but can be overcome or modified by special planning and design. *Severe* means that the soil properties and site features are so unfavorable and so difficult to correct or overcome that major soil reclamation, special design, or intensive maintenance is required.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have a low seepage potential, which is determined by permeability and the depth to fractured or permeable bedrock or other permeable material.

Embankments, dikes, and levees require soil material that is resistant to seepage, erosion, and piping and has favorable stability, shrink-swell potential, shear strength, and compaction characteristics. Large stones and organic matter in a soil downgrade the suitability of the soil for use in embankments, dikes, and levees.

Aquifer-fed excavated ponds are bodies of water made by excavating a pit or dugout into a ground-water aquifer. Excluded are ponds that are fed by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Ratings in table 11 are for ponds that are properly designed, located, and constructed. Soil properties and site features that affect aquifer-fed ponds are depth to a permanent water table, permeability of the aquifer, quality of the water, and ease of excavation.

Drainage of soil is affected by such soil properties as permeability; texture; depth to bedrock, hardpan, or other layers that affect the rate of water movement; depth to the water table; slope; stability of ditchbanks; susceptibility to flooding; salinity and alkalinity; and availability of outlets for drainage.

Irrigation is affected by such features as slope, susceptibility to flooding, hazards of water erosion and soil blowing, texture, presence of salts and alkali, depth of root zone, rate of water intake at the surface, permeability of the soil below the surface layer, available water capacity, need for drainage, and depth to the water table.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to intercept runoff. They allow water to soak into the soil or flow slowly to an outlet. Features that affect suitability of a soil for terraces are uniformity and steepness of slope; depth to bedrock, hardpan, or other unfavorable material; large stones; permeability; ease of establishing vegetation; and resistance to water erosion, soil blowing, soil slipping, and piping.

Grassed waterways are constructed to channel runoff to outlets at a nonerosive velocity. Features that affect the use of soils for waterways are slope, permeability, erodibility, wetness, and suitability for permanent vegetation.

Recreation

The soils of the survey area are rated in table 12 according to limitations that affect their suitability for recreation uses. The ratings are based on such restrictive soil features as flooding, wetness, slope, and texture of the surface layer. Not considered in these ratings, but important in evaluating a site, are location and accessibility of the area, size and shape of the area and its scenic quality, the ability of the soil to support vegetation, access to water, potential water impoundment sites

pacity of the soil to absorb septic tank effluent. Soils subject to flooding are limited, in varying degree, for recreation use by the duration and intensity of flooding and the season when flooding occurs. Onsite assess-

of shaping sites or of building access roads and parking areas.

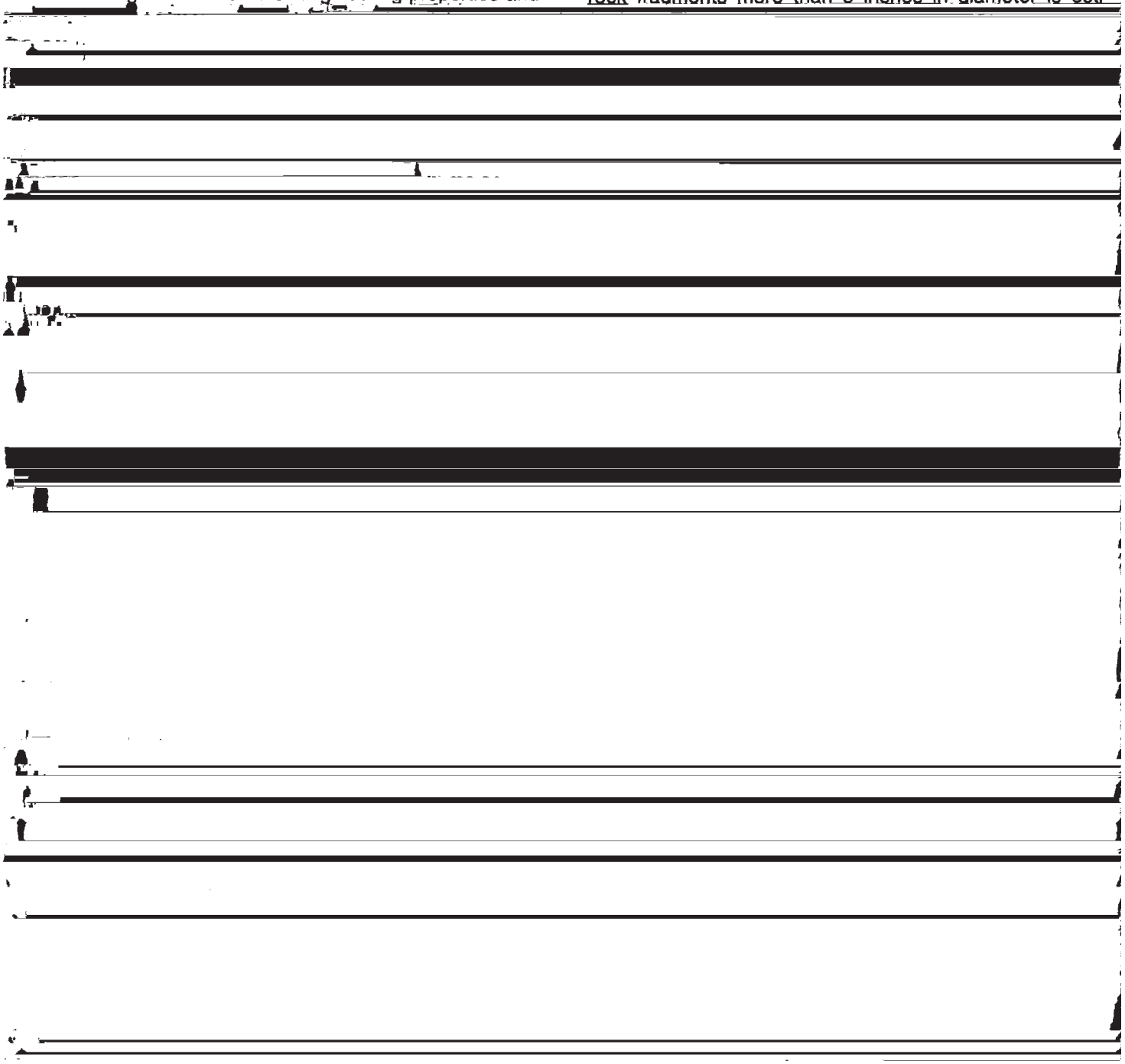
Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones or boulders, is firm after rains, and is not dusty when dry. If shaping is required to obtain a uniform grade, the depth of the soil over bedrock or hardpan should be enough to allow necessary grading.

Paths and trails for walking, horseback riding, bicycling, and other uses should require little or no cutting and filling. The best soils for this use are those that are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once during the annual period of use. They should have moderate slopes and have few or no stones or boulders on the surface.

Soil properties

Engineering properties

Table 13 gives estimates of engineering properties and



survey area.

Most soils have, within the upper 5 or 6 feet, horizons of contrasting properties. Table 13 gives information for each of these contrasting horizons in a typical profile. *Depth* to the upper and lower boundaries of each horizon is indicated. More information about the range in depth and about other properties in each horizon is

classification, without group index numbers, is given in table 13. Also in table 13 the percentage, by weight, of rock fragments more than 3 inches in diameter is estimated mainly by observing volume percentage in the field and then converting that, by formula, to weight percentage.

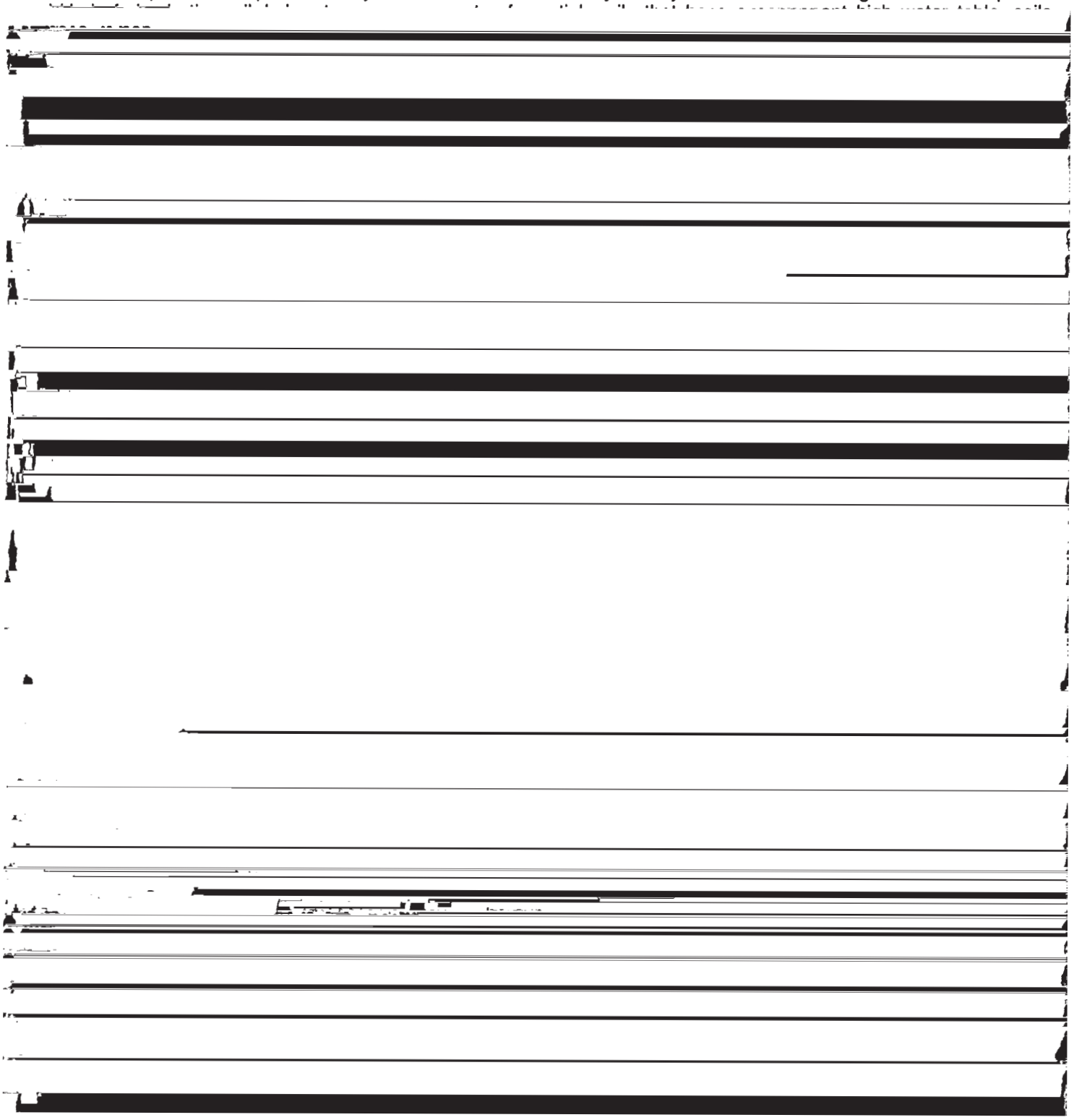
Percentage of the soil material less than 3 inches in diameter that passes each of four sieves (U.S. standard) is estimated for each major horizon. The estimates are based on tests of soils that were sampled in the survey

fied by laboratory analyses. Soil reaction is important in selecting the crops, ornamental plants, or other plants to be grown; in evaluating soil amendments for fertility and stabilization; and in evaluating the corrosivity of soils.

Shrink-swell potential depends mainly on the amount

soils that have moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clay soils that have a high shrink-swell poten-



many soils, the limited depth to bedrock is a part of the definition of the soil series. The depths shown are based on measurements made in many soil borings and on other observations during the mapping of the soils. The kind of bedrock and its hardness as related to ease of excavation are also shown. Rippable bedrock can be excavated with a single-tooth ripping attachment on a 200-horsepower tractor, but hard bedrock generally requires blasting.

Physical and chemical analyses of selected soils

Physical and chemical data resulting from laboratory analyses are useful to the soil scientist in classifying soils. These data are helpful in estimating available water capacity, acidity, cation exchange capacity, mineralogical composition, organic-matter content, and other soil characteristics that affect management needs. The data are also helpful in developing concepts of soil formation. More recently, laboratory data have proved helpful in rating soils for such nonfarm uses as residential, industrial, recreational, or transportation development.

Several factors are involved in selecting soils for laboratory analyses. Soils that are extensive and most important in the survey area are considered first, and available laboratory data are revised to determine the need for additional information. Generally, priority is given to soils for which little or no laboratory data is available.

ration was determined by dividing this total into the sum of calcium, potassium, magnesium, and sodium and multiplying by 100.

Soil series and morphology

In this section, each soil series recognized in the survey area is described in detail. The descriptions are arranged in alphabetic order by series name.

Characteristics of the soil and the material in which it formed are discussed for each series. The soil is then compared to similar soils and to nearby soils of other series. Then a pedon, a small three-dimensional area of soil that is typical of the soil series in the survey area, is described. The detailed descriptions of each soil horizon follow standards in the Soil Survey Manual (*5*). Unless otherwise noted, colors described are for moist soil.

Following the pedon description is the range of important characteristics of the soil series in this survey area. Phases, or mapping units, of each soil series are described in the section "Soil maps for detailed planning."

Amagon series

The Amagon series consists of deep, poorly drained, slowly permeable, level soils. These soils formed in beds of loamy alluvial sediment. They are on broad flats on the lower parts of old natural levees and in shallow

(10YR 5/8) and few medium distinct brown (10YR 4/3) mottles; moderate medium subangular blocky structure; friable; patchy distinct clay films on faces of peds; common small dark concretions; strongly

so well drained as Arkana soils and do not have a mollic epipedon.

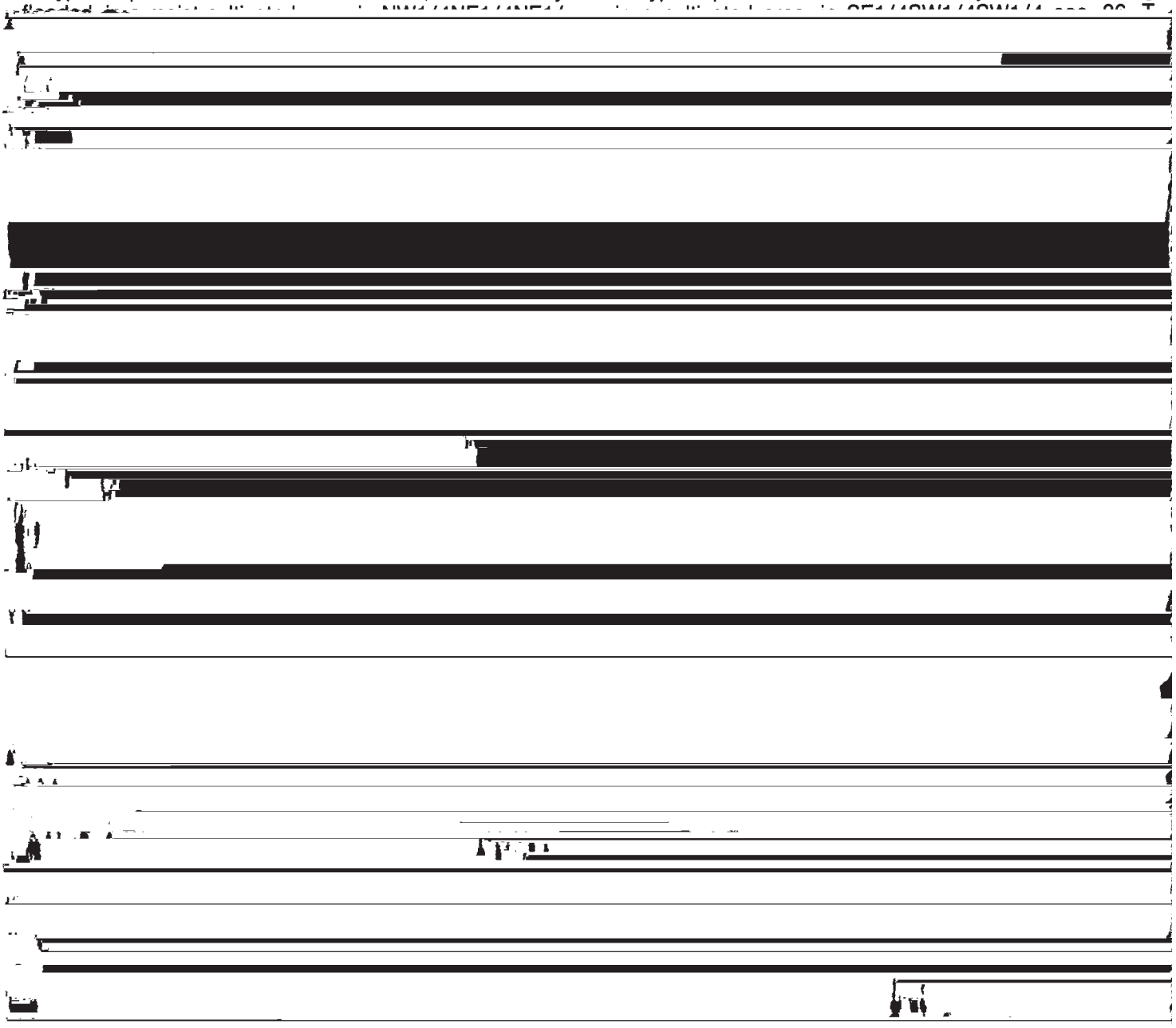
Typical pedon of Arkana silty clay loam, in a moist wooded area of Arkana-Rock outcrop complex, 3 to 12

Ashton soils are geographically associated with Hontas and Peridge soils. Hontas soils are in wider parts of flood plains of creeks and rivers. They are not so well drained as Ashton soils. Peridge soils are on adjacent terraces. They have a redder B horizon than Ashton soils. Neither Hontas nor Peridge soils have the mollic epipedon that Ashton soils have.

Typical pedon of Ashton silt loam, occasionally

a mollic epipedon. Dundee soils are on the lower parts of natural levees. They have less sand than Bosket soils and are somewhat poorly drained. McCrory soils are on broad flats and on lower parts of natural levees. They are gray throughout and have a natric horizon. Patterson soils are in depressions on natural levees. They have a coarse-loamy control section.

Typical pedon of Bosket fine sandy loam, undulating,

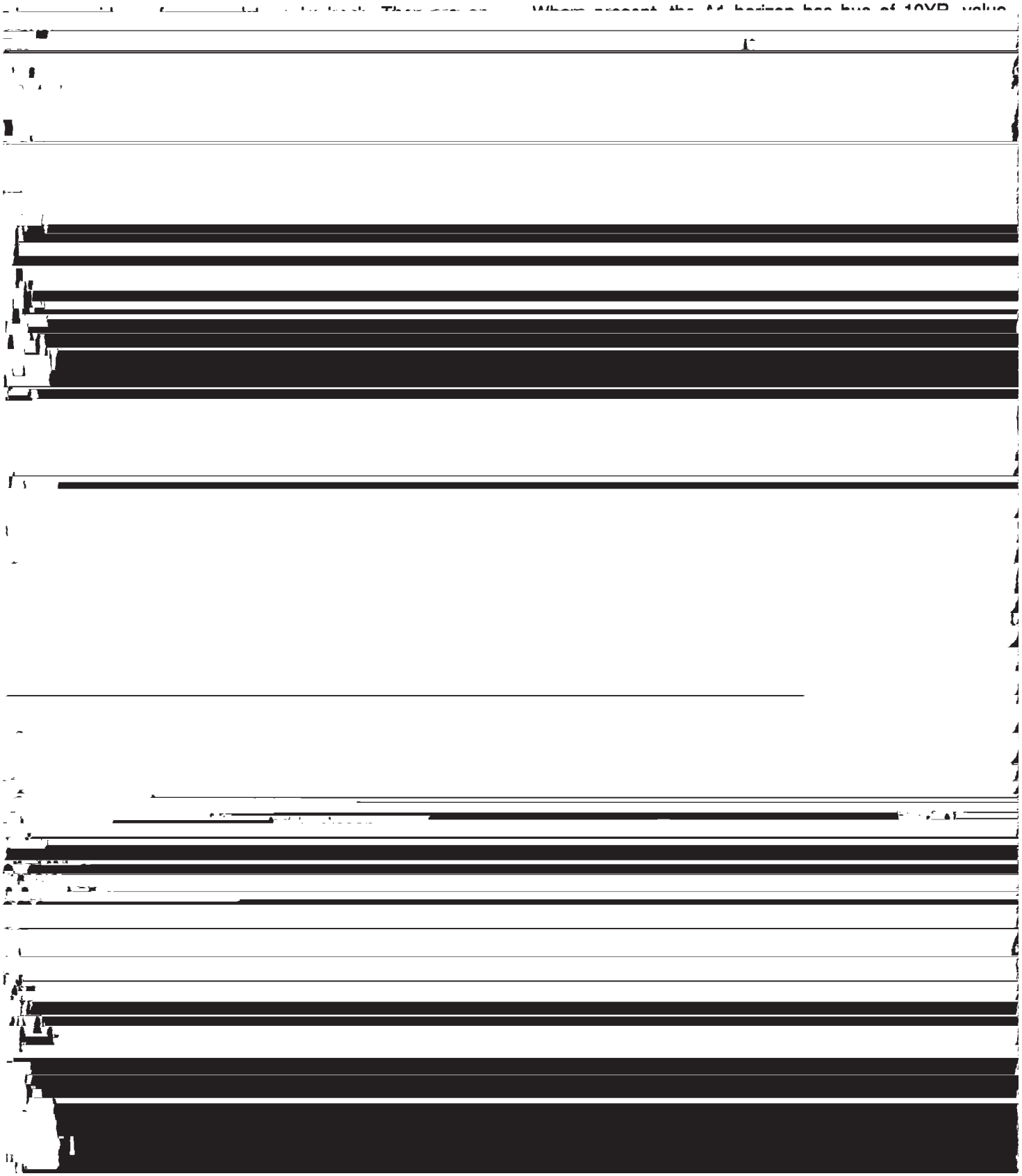


Ap—0 to 8 inches; dark brown (10YR 3/3) silt loam; weak medium granular structure; friable; many fine roots; many fine pores; slightly acid; abrupt wavy boundary.

B21t—8 to 20 inches; brown (7.5YR 4/4) silt loam; weak

Ap—0 to 8 inches; dark brown (10YR 3/3) fine sandy loam; weak medium granular structure; very friable; common fine roots; slightly acid; clear smooth boundary.

A3—8 to 14 inches; dark yellowish brown (10YR 3/4)



C—60 to 72 inches; pale brown (10YR 6/3) loamy fine sand; massive; very friable; medium acid.

The solum ranges from 48 to more than 72 inches in thickness. Reaction is medium acid or strongly acid throughout, except where the surface layer has been limed.

The A horizon is 24 to 36 inches thick. It has hue of 10YR, value of 3, and chroma of 4 or value of 4 and chroma of 3.

The B2t horizon has hue of 10YR or 7.5YR, value of 4, and chroma of 4. It is fine sandy loam or sandy clay loam. The B3 horizon has hue of 10YR, value of 5, and chroma of 4, 6, and 8. It is loamy fine sand, sandy loam, or fine sandy loam. The B3 horizon is mottled in shades of brown.

Captina series

The Captina series consists of deep, moderately well drained, slowly permeable, gently sloping to moderately sloping soils. These soils formed in thin deposits of loess or old valley fill over loamy material weathered from [illegible]

medium subangular blocky; firm, 60 percent by volume brittle and compact; few light gray (10YR 7/1) silt coatings on faces of prisms; few fine roots in light gray streaks; continuous distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bx2—32 to 46 inches; mottled yellowish brown (10YR 5/6) and gray (10YR 6/1) silt loam; common medium distinct yellowish brown (10YR 5/8) and few fine prominent yellowish red mottles; moderate medium prismatic structure parting to moderate subangular blocky; firm, brittle, 75 percent by volume brittle and compact; few fine roots in light gray streaks; common light gray (10YR 7/1) silt coatings on faces of prisms; continuous distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

Bx3—46 to 58 inches; mottled yellowish brown (10YR 5/6), grayish brown (10YR 5/2), and yellowish red (5YR 5/8) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm, 75 percent by volume brittle and compact; few dark concretions; very strongly acid; clear wavy boundary.

Typical pedon of Clarksville cherty silt loam, 12 to 20 percent slopes, in a moist pasture, in SE1/4SW1/4SW1/4 sec. 16, T. 19 N., R. 1 E.:

Ap—0 to 4 inches; brown (10YR 5/3) cherty silt loam; weak fine granular structure; very friable; common fine roots; 30 percent by volume fragments of chert; strongly acid; abrupt wavy boundary.

A2—4 to 16 inches; pale brown (10YR 6/3) cherty silt loam; weak medium subangular blocky structure; very friable; common fine roots; 30 percent by volume, fragments of chert; very strongly acid; clear wavy boundary.

B21t—16 to 26 inches; yellowish red (5YR 5/6) very cherty silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; few fine pores; few red oxide coatings around small chert fragments; 40 percent by volume fragments of chert;

B2t horizon has hue of 7.5YR or 5YR, value of 5, and chroma of 6 or 8; hue of 7.5YR, value of 4, and chroma of 4; or hue of 5YR or 2.5YR, value of 4, and chroma of 6 or 8. Texture is silt loam, silty clay loam, or silty clay. Chert fragments are 35 to 75 percent of the B2t horizon.

Some pedons have a C horizon that is 35 to 90 percent chert fragments.

Crowley series

The Crowley series consists of deep, somewhat poorly drained, very slowly permeable, level soils. These soils formed in a thin layer of silty sediment of alluvial origin and in the underlying clayey sediment. They are on broad flats at higher elevations than adjacent natural drainageways and abandoned backswamps. These soils are saturated with water for brief periods late in winter

structure; friable; many dark brown stains; common soft black concretions; medium acid.

The solum ranges from 40 to 72 inches or more in thickness. Reaction is slightly acid to very strongly acid throughout.

The A horizon is 12 to 22 inches thick. The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2. The A2g horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or value of 5 and chroma of 2. Mottles are in shades of brown or yellowish brown.

The B2t horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or value of 5 and chroma of 2. The B2t

B1—9 to 16 inches; yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; firm; few medium and fine roots; few fine pores; continuous distinct clay films on faces of peds; about 10 percent by volume chert fragments; strongly acid; clear wavy boundary.

B21t—16 to 32 inches; strong brown (7.5YR 5/6) silty clay; common medium prominent yellowish brown (10YR 5/8), yellowish red (5YR 4/6), and pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure; firm; few medium roots; continuous distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

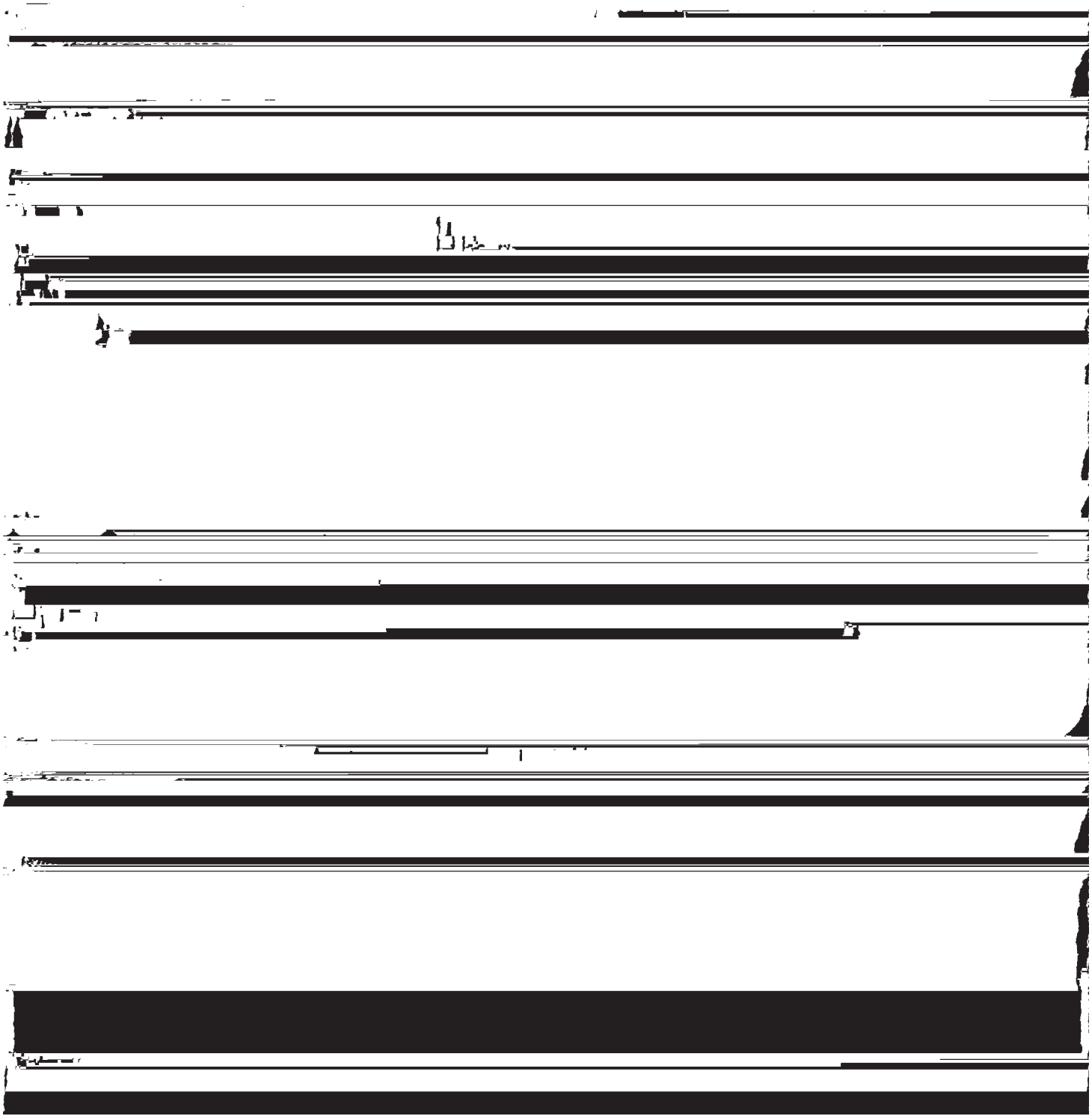
B22t—32 to 47 inches; strong brown (7.5YR 5/6) clay;

on higher and older natural levees. They have more sand in the B horizon than Dundee soils. Kobel soils are in backswamps and have a fine textured control section. Loring soils are on adjacent hillsides, hilltops, and terraces. They have a fragipan.

Typical pedon of Dundee silt loam, in a moist cultivat-

The C horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or value of 6 and chroma of 2. It is silt loam, loam, or silty clay.

Gepp series



B22t—28 to 53 inches; red (2.5YR 4/8) clay; common medium distinct strong brown (7.5YR 5/8) mottles; moderate to strong medium subangular blocky structure parting to strong fine angular blocky; very firm; few medium roots; few pores lined with clay films; continuous thin clay films on faces of peds; about 5 percent by volume fragments of chert 1/2 inch to 3 inches in diameter; strongly acid; gradual smooth boundary.

B23t—53 to 72 inches; yellowish red (5YR 4/8) clay; common medium prominent strong brown (7.5YR 5/8) and red (10R 4/6) mottles and few fine prominent light gray mottles; moderate to strong coarse subangular blocky structure parting to strong fine angular

B21—6 to 14 inches; dark yellowish brown (10YR 4/4) silt loam; few fine distinct grayish brown mottles; weak medium subangular blocky structure; friable; few fine roots; few fine pores; few dark brown stains; slightly acid; clear wavy boundary.

B22—14 to 30 inches; yellowish brown (10YR 5/4) silt loam; common medium distinct dark yellowish brown (10YR 4/4) and grayish brown (10YR 5/2) mottles; moderate medium subangular blocky structure; friable; few fine roots; few fine pores; few black concretions; few dark brown stains; slightly acid; gradual wavy boundary.

C1—30 to 42 inches; grayish brown (10YR 5/2) silt

Typical pedon of Jackport silty clay loam, in a moist cultivated area, in NE1/4NE1/4NE1/4 sec. 13, T. 18 N., R. 2 E.:

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) silty clay loam; common medium distinct gray (10YR 5/1) mottles; weak medium subangular blocky structure; firm; few fine roots; medium acid; abrupt smooth boundary.

A2g—5 to 12 inches; gray (10YR 5/1) silty clay loam; common medium faint gray (10YR 6/1) mottles; common red and strong brown stains from plant materials; weak medium subangular blocky structure; firm; common fine roots; many black accretions; medium acid; clear smooth boundary.

B21tg—12 to 17 inches; dark grayish brown (10YR 4/2) silty clay; moderate medium subangular blocky

Kobel series

The Kobel series consists of deep, poorly drained, very slowly permeable, level soils. These soils formed in clayey alluvium on flood plains of rivers and in backswamps. They are saturated by water late in winter and early in spring. The native vegetation is hardwoods—mainly water-tolerant species (fig. 12). Slope is 0 to 1 percent.

Kobel soils are geographically associated with Amagon, Crowley, Dundee, and Jackport soils. Amagon soils are on broad flats on the lower parts of old natural levees. They have a fine-silty control section that is more acid than Kobel soils. Crowley soils are on broad flats at higher elevations than Kobel soils. They have an argillic horizon and an abrupt textural change between the A and B horizons. Dundee soils are on the lower parts of older natural levees that border abandoned stream chan-

The solum ranges from 30 to 60 inches in thickness. Reaction is neutral to strongly acid in the A horizon and moderately alkaline to slightly acid in the B and C horizons.

The A horizon is 4 to 12 inches thick. Where it has value of 3 it is less than 10 inches thick. The Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2. Where present, the A11 horizon has hue of 10YR, value of 3, and chroma of 1.

The Bg horizon has hue of 10YR, value of 4 or 5, and chroma of 1. It is silty clay loam, silty clay, or clay and is mottled in shades of brown.

Bx1—24 to 40 inches; yellowish brown (10YR 5/6) silty clay loam; common medium distinct brown (7.5YR 5/4) and gray (10YR 6/1) mottles; moderate coarse prismatic structure parting to moderate medium subangular blocky; firm, 70 percent by volume brittle and compact; few fine roots in vertical cracks between prisms; patchy distinct clay films on faces of peds; few dark brown concretions; very strongly acid; gradual boundary.

Bx2—40 to 56 inches; strong brown (7.5YR 5/6) silt loam; many coarse distinct gray (10YR 6/1) and common medium distinct yellowish brown (10YR 5/

[redacted]

The C horizon has hue of 10YR, value of 4 or 5, and chroma of 1 or hue of N, value of 5, and chroma of 0. It is clay loam, silty clay, or clay and is mottled in shades of gray or brown.

Loring series

The Loring series consists of deep, moderately well drained, moderately slowly permeable, gently sloping to moderately sloping soils. These soils formed in loamy loessal material. They are on hilltops, hillsides, and terraces on uplands adjacent to the bottom lands. The native vegetation is hardwoods. Slope is 3 to 12 percent. Loring soils are commonly associated with

4) and brownish yellow (10YR 6/8) mottles; moderate coarse prismatic structure parting to moderate medium subangular blocky; very firm, 70 percent by volume brittle and compact; few fine roots; patchy distinct clay films on faces of peds; few trellis-shaped black stains on faces of prisms; few dark brown concretions; very strongly acid; gradual wavy boundary.

Bx3—56 to 72 inches; brown (7.5YR 5/4) silt loam; many medium distinct gray (10YR 6/1) and common medium distinct yellowish brown (10YR 5/6) mottles; moderate coarse prismatic structure parting to moderate medium subangular blocky; very firm, 80 percent by volume brittle and compact; few fine roots;

[redacted]

older natural levees along abandoned river channels. They have more sand throughout than McCrory soils. Crowley soils are on broad flats at higher elevations. They have a fine control section. Patterson soils are in depressions on natural levees. They are better drained than McCrory soils and have a coarse-loamy control section.

Typical pedon of McCrory fine sandy loam, in a cultivated area, in NW1/4SE1/4NE1/4 sec. 3, T. 18 N., R. 1 E.:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; very friable; few roots; few dark concretions; strongly acid; abrupt smooth boundary.

A21g—8 to 14 inches; grayish brown (10YR 5/2) fine [illegible]

The A horizon is 6 to 20 inches thick. The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2. The A2 horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or value of 5 and chroma of 2. It is mottled in shades of brown.

The B horizon has hue of 10YR, value of 4 to 6, and chroma of 1. It is fine sandy loam or sandy clay loam and is mottled in shades of brown.

The C horizon has hue of 10YR, value of 4 to 6, and chroma of 1. It is loamy fine sand or fine sandy loam and is mottled in shades of brown.

Patterson series

The Patterson series consists of deep, somewhat poorly drained, moderately rapidly permeable, level soils.

C1g—34 to 50 inches; gray (10YR 6/1) loamy fine sand; massive; very friable; very strongly acid; gradual

B22t—24 to 36 inches; yellowish red (5YR 4/6) silty clay loam; few fine yellowish brown (10YR 5/6) mottles;

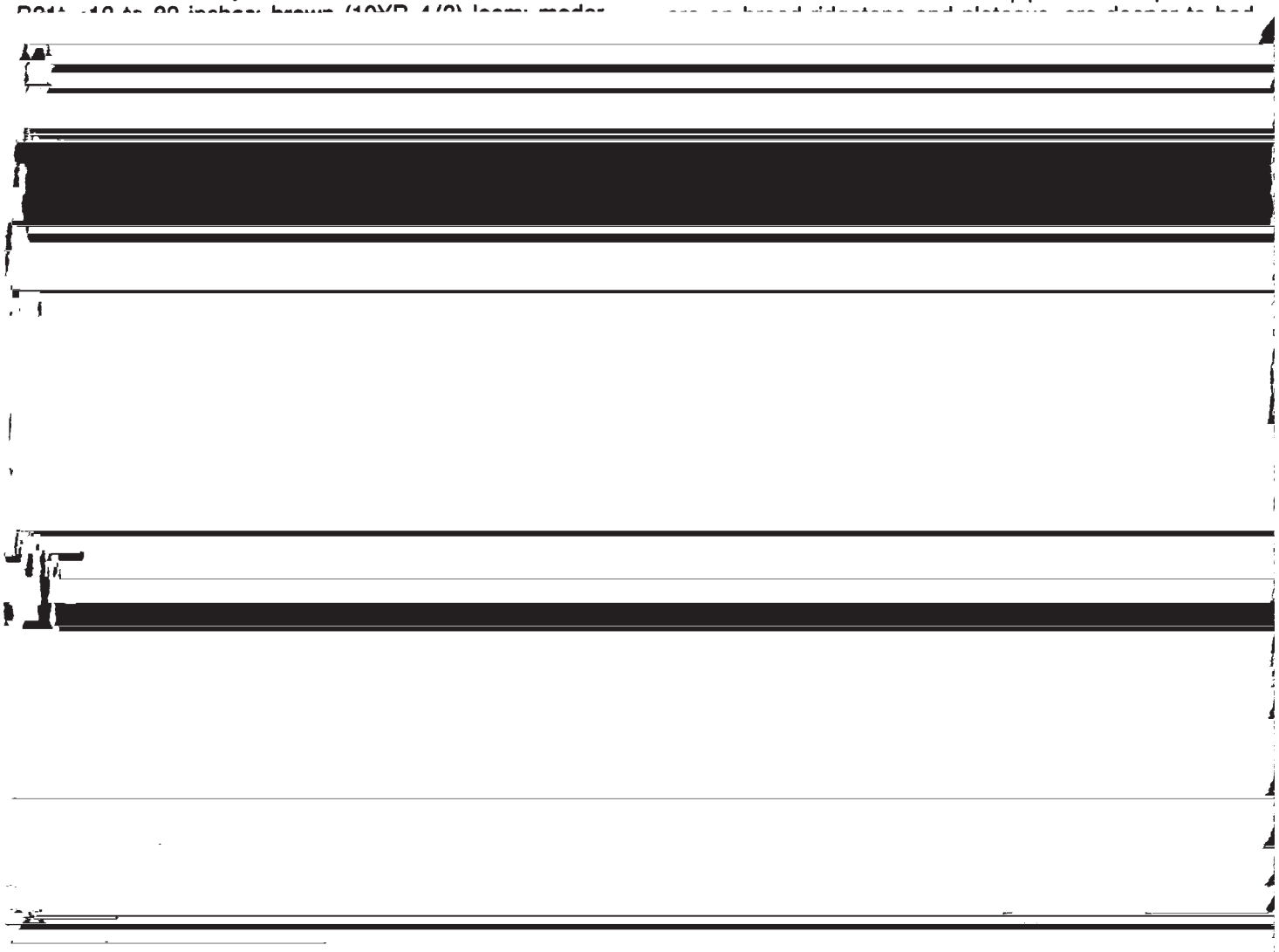
Razort soils, and they have a fine-silty control section. Peridge soils are on adjacent terraces. They have a redder B horizon than Razort soils and a fine-silty control section.

Typical pedon of Razort silt loam, frequently flooded, in a moist meadow, in SW1/4NE1/4SW1/4 sec. 18, T. 19 N., R. 2 W.:

Ap—0 to 8 inches; dark brown (10YR 3/3) silt loam; weak fine granular structure; friable; common fine roots; about 5 percent by volume fragments; chert; neutral; abrupt smooth boundary.

B1—8 to 12 inches; brown (10YR 4/3) silt loam; weak medium subangular blocky structure; friable; common fine roots; few fine pores; about 5 percent by volume fragments of chert; slightly acid; clear smooth boundary.

B21t—12 to 22 inches; brown (10YR 4/3) loam; moder-



ate medium subangular blocky structure; friable; few fine roots; few fine pores; patchy distinct clay films

loam or gravelly, very gravelly, cherty, or very cherty analogs of these textures.

Ventris series

The Ventris series consists of moderately deep, moderately well drained, very slowly permeable, gently sloping to moderately sloping soils. These soils formed in clayey material derived from limestone or mixed limestone and calcareous shale. They are on lower parts of hilltops, on side slopes, and on benches. The native vegetation is mainly poor quality upland oak and a few redcedar. Slope is 3 to 30 percent.

Ventris soils are geographically associated with Arkana, Doniphan, and Gepp soils. Arkana soils are on side slopes and benches. They are better drained than Ventris soils and have a mollic epipedon. Doniphan soils

rock and are better drained than Ventris soils. Gepp soils are on steeper hilltops and side slopes. They are better

loam. The A horizon is 0 to 15 percent chert or flat limestone fragments less than 6 inches in length.

The B2t horizon has hue of 10YR or 2.5Y, value of 5, and chroma of 4 or 6. It is silty clay or clay and is mottled in shades of gray and brown.

Classification of the soils

The system of soil classification used was by the National Cooperative Soil Survey has six categories (*7*). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. In this system the classification is based on the different soil properties that can be observed in the field or those that can be inferred either from other properties that are observable in the field or from the combined data of soil science and other disciplines. The properties selected for the higher categories are the result of soil genesis or of factors that affect soil genesis. In table 18, the soils of the survey area are classified according to the system. Categories of the system are discussed in the following paragraphs.

ORDER. Ten soil orders are recognized as classes in the system. The properties used to differentiate among orders are those that reflect the kind and degree of dominant soil-forming processes that have taken place. Each order is identified by a word ending in *sol*. An example is Alfisol.

SUBORDER. Each order is divided into suborders

FAMILY. Families are established within a subgroup on the basis of similar physical and chemical properties that affect management. Among the properties considered in horizons of major biological activity below plow depth are particle-size distribution, mineral content, temperature regime, thickness of the soil penetrable by roots, consistence, moisture equivalent, soil slope, and permanent cracks. A family name consists of the name of a subgroup and a series of adjectives. The adjectives are the class names for the soil properties used as family differentiae. An example is fine-silty, mixed, thermic, Typic Ochraqualfs.

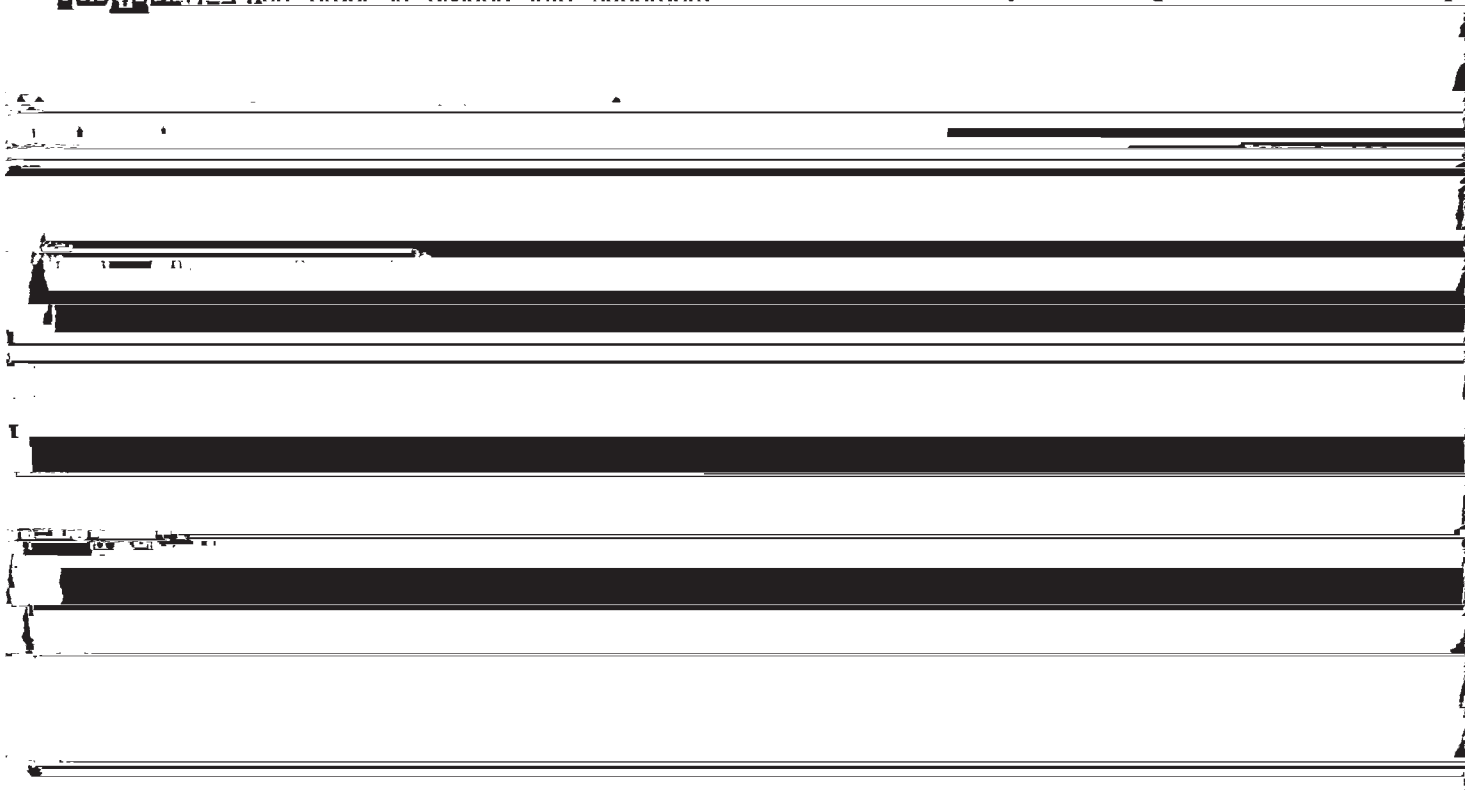
SERIES. The series consists of soils that formed in a particular kind of material and have horizons that, except for texture of the surface soil or of the underlying substratum, are similar in differentiating characteristics and in arrangement in the soil profile. Among these characteristics are color, texture, structure, reaction, consistence, and mineral and chemical composition.

Formation of the soils

In this section the factors that affect soil formation in Randolph County and the processes of horizon differentiation are discussed.

Factors of soil formation

Soil is formed by weathering and other soil-forming



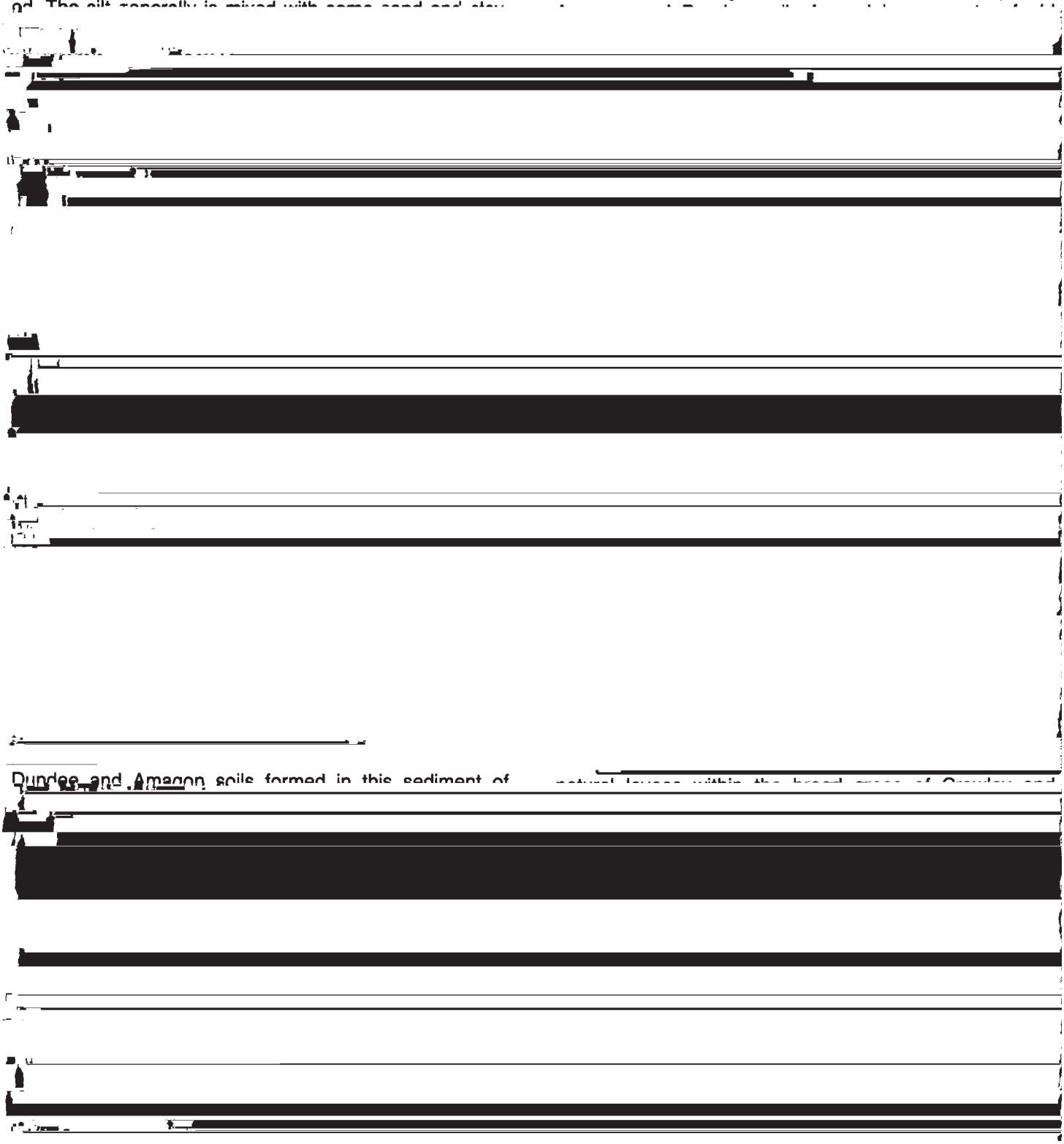
in January is about 37 degrees. In the Ozark Highlands, temperatures are generally a few degrees cooler. The total annual rainfall is about 47 inches and is well distrib-

lands in the east. Consequently, the soils of the county formed in parent material of considerable variety.

The Salem Plateau of the Ozark Highlands begins to

bands of sand form low ridges known as natural levees. The main soils in such areas are the Bosket, Broseley, McCrory, and Patterson soils. As the floodwaters continue to spread, the finer sediment, such as silt, is deposit-

probably were laid down at the same time as the deposits on Crowley Ridge. Crowley soils formed where the silt is the thickest in Randolph County. Jackport soils formed where there are clay lenses in the thinnest silt deposits.



Dundee and Amagon soils formed in this sediment of

The present flood plains along streams in the county tral States about 11,000 years ago. In terms of geologi-

though the C horizon can be materially modified by weathering. In some young less developed soils, the C horizon immediately underlies the A horizon and has been slightly modified by living organisms, as well as by weathering.

Several processes have been active in the formation of soil horizons in Randolph County. Among these are: (1) the accumulation of organic matter, (2) the leaching of calcium carbonates and bases, (3) the reduction and transfer of iron, and (4) the formation and translocation of silicate clay materials. In most of the soils of the county, more than one of these processes has been active.

(2) American Society for Testing and Materials. 1974. Method for classification of soils for engineering purposes. ASTM Stand. D 2487-69. *In* 1974 Annual Book of ASTM Standards, Part 19, 464 pp., illus.
(3) Day, Paul R. and others. 1956. Report of the committee on physical analysis, 1954-1955. Soil Sci. Soc. Am. Proc. 20: 167-169.
(4) United States Department of Agriculture. 1938. Soils and men. U.S. Dep. Agric. Yearb., 1232 pp., illus.
(5) United States Department of Agriculture. 1951. Soil survey manual. U.S. Dep. Agric. Handb. 18, 503 pp., illus. Supplements replacing pp., 173-188 issued May 1962

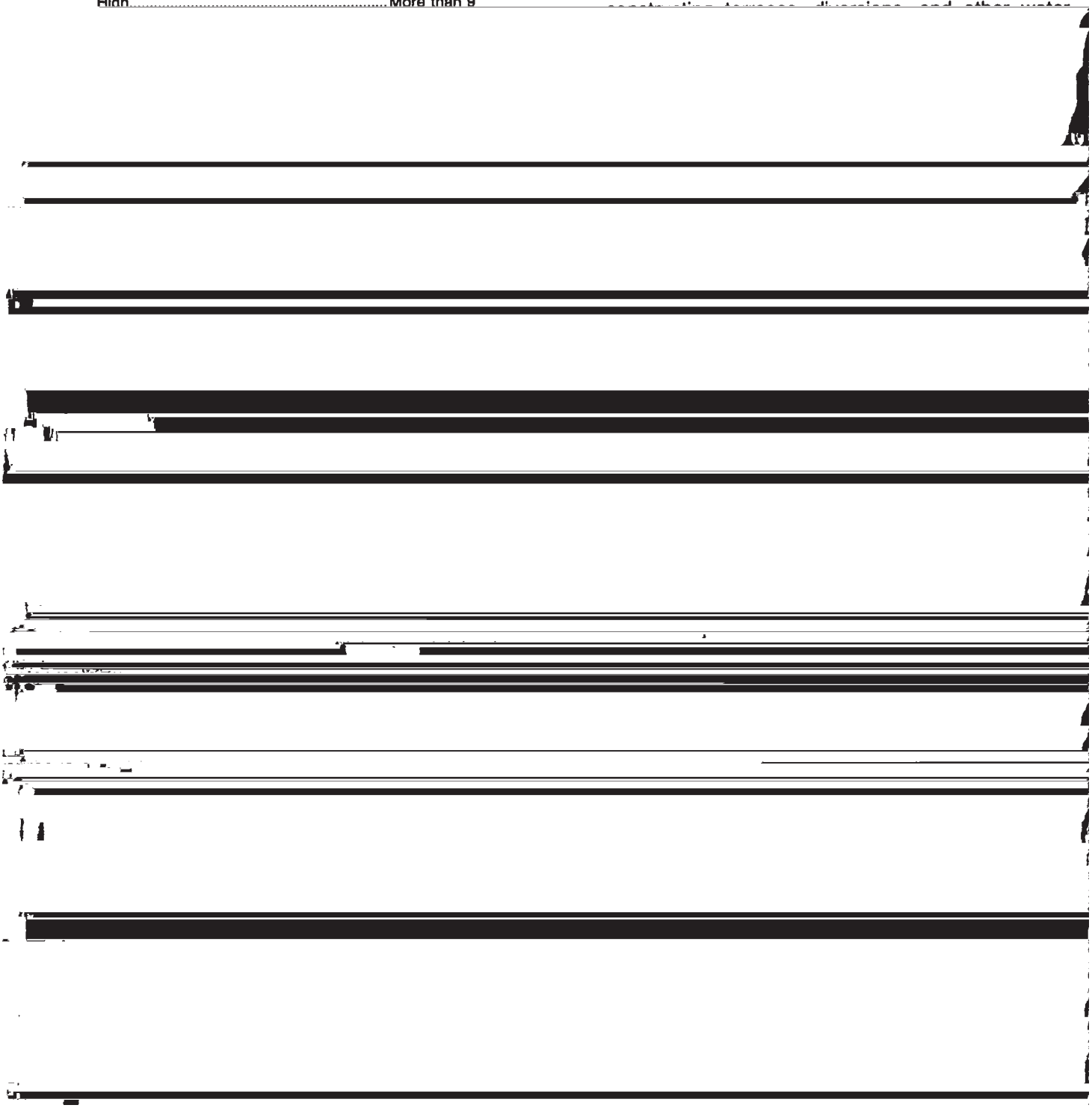
is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as—

	Inches
Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	More than 9

Cobblestone (or cobble). A rounded or partly rounded fragment of rock 3 to 10 inches (7.5 to 25 centimeters) in diameter.

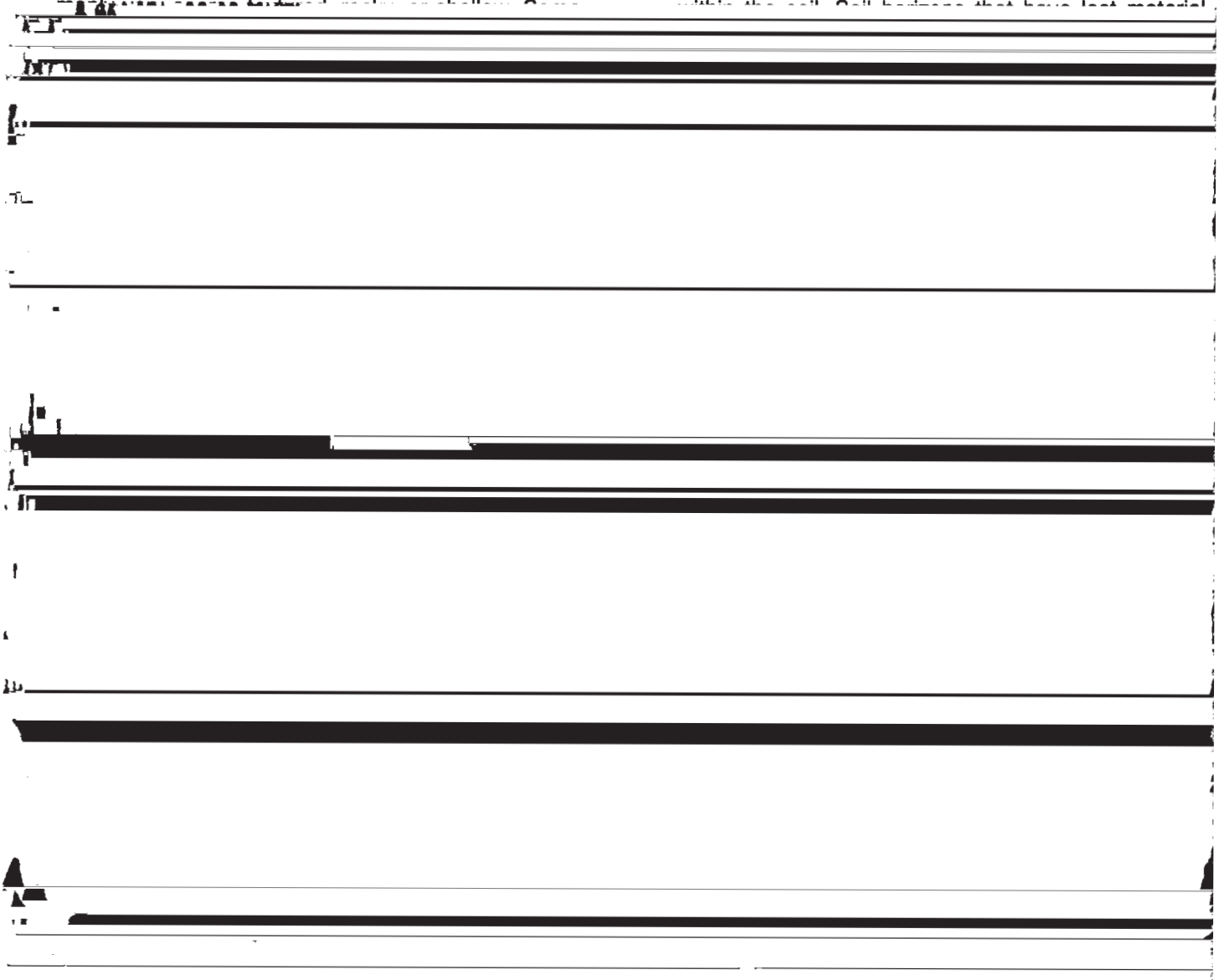
Colluvium. Soil material, rock fragments, or both moved by creep, slide, or local wash and deposited at the bases of steep slopes.

Complex slope. Irregular or variable slope. Planning or



age or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:

Excessively drained.—Water is removed from the soil very rapidly. Excessively drained soils are com-



are steep. All are free of the mottling related to wetness.

Somewhat excessively drained.—Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.

Well drained.—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not

ents, as for example in "hillpeats" and "climatic moors."

Drainage, surface. Runoff, or surface flow of water, from an area.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another

through eluviation are eluvial; those that have received material are illuvial.

Erosion. The wearing away of the land surface by running water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid

Water standing for short periods after rainfall or commonly covering swamps and marshes is not considered flooding.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Foot slope. The inclined surface at the base of a hill.

Forage. Plant material used as feed by domestic animals. Forage can be grazed or cut for hay.

by soil-forming processes. The major horizons of mineral soil are as follows:

O horizon.—An organic layer, fresh and decaying plant residue, at the surface of a mineral soil.

A horizon.—The mineral horizon, formed or forming at or near the surface, in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon most of which was originally part of a B horizon.

A2 horizon.—A mineral horizon, mainly a residual

the acreage is artificially drained and part is undrained.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated

(about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Munsell notation. A designation of color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color of 10YR hue, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value between 6.6 and 7.3.

Nutrient, plant. Any element taken in by a plant, essential to its growth, and used by it in the production of

Piping. Moving water forms subsurface tunnels or pipelike cavities in the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from a semisolid to a plastic state.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Polypedon. A volume of soil having properties within the limits of a soil series, the lowest and most homogeneous category of soil taxonomy. A "soil individual."

Poorly graded. Refers to soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Poor outlets. Surface or subsurface drainage outlets difficult or expensive to install.

Productivity (soil). The capability of a soil for producing a specified plant or sequence of plants under a specified system of management. Productivity is measured in terms of output or harvest in relation

Rooting depth. Shallow root zone. The soil is shallow over a layer that greatly restricts roots. See Root zone.

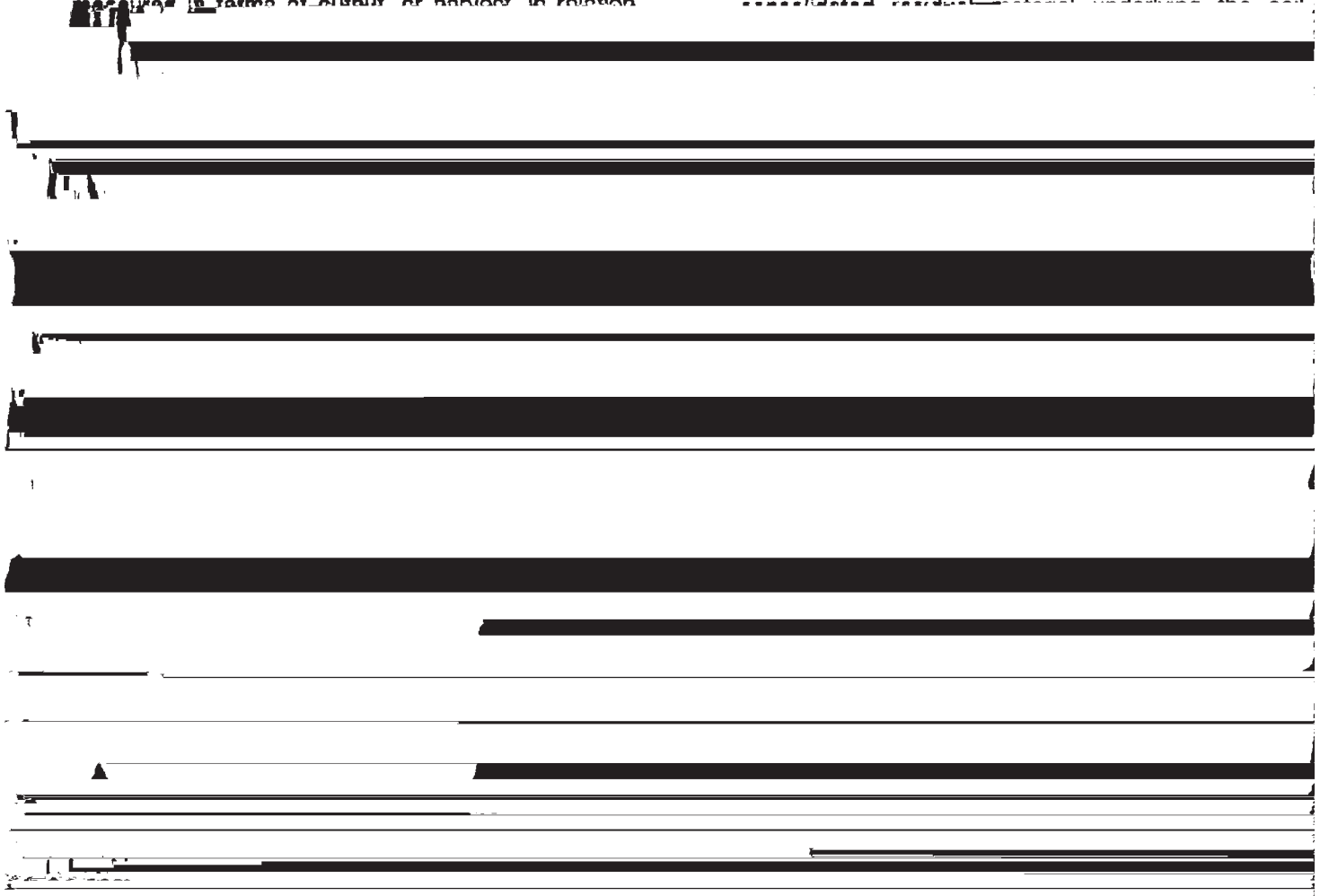
Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged in stream channels from a drainage area. The water that flows off the land surface without sinking in is called surface runoff; that which enters the ground before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-size particles.

Saprolite (geology). Soft, earthy, clay-rich, thoroughly decomposed rock formed in place by chemical weathering of igneous and metamorphic rock. In a soil survey, the term saprolite is applied to any un-

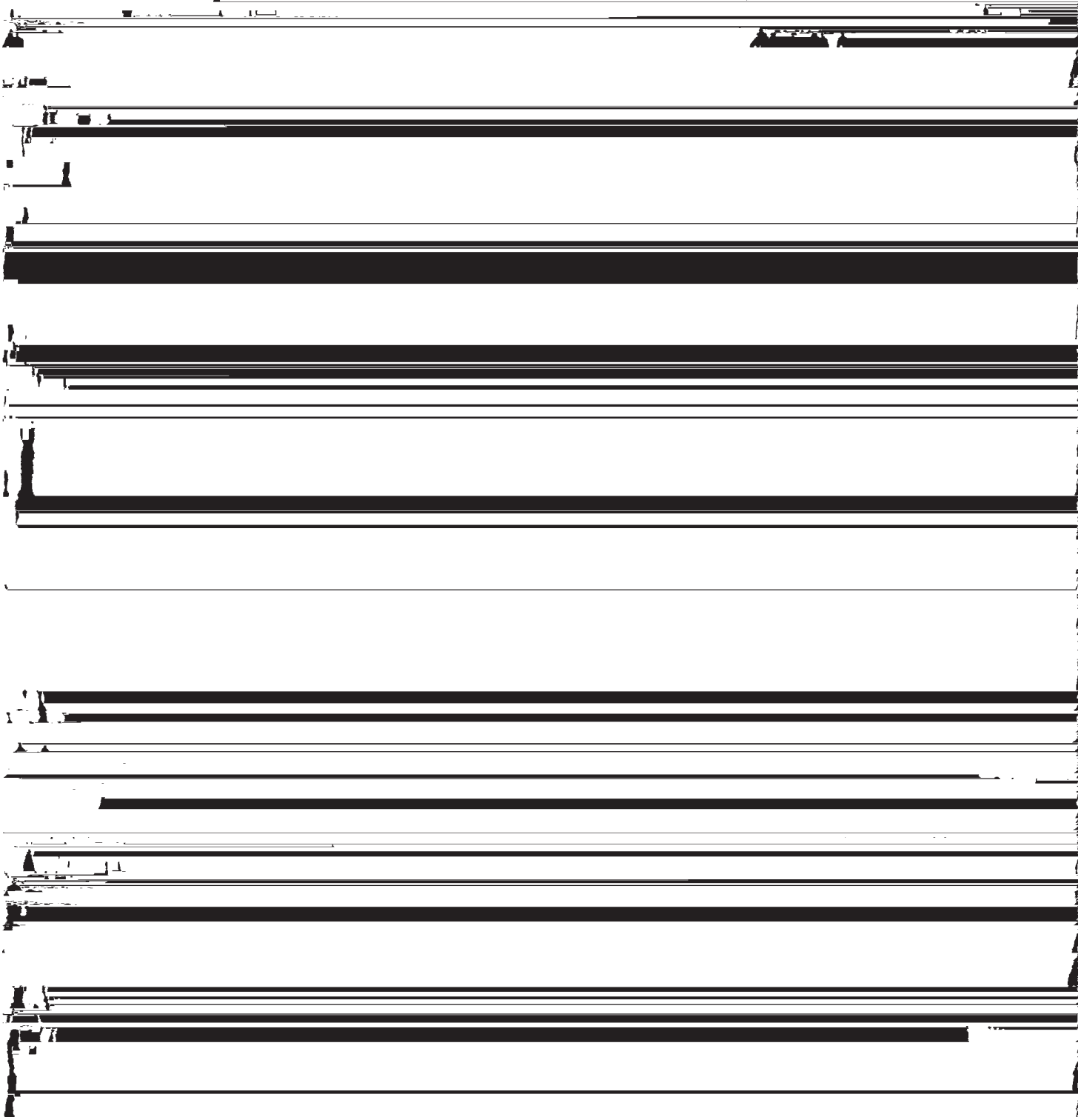


millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an

forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering



Water table. The upper limit of the soil or underlying rock material that is wholly saturated with water.
Water table, apparent. A thick zone of free water in the soil. An apparent water table is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil.
Water table, artesian. A water table under hydrostatic head, generally beneath an impermeable layer. When this layer is penetrated, the water level rises in an uncased borehole.
Water table, perched. A water table standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to a soil or soil material consisting of particles well distributed over a wide range in size or diameter. Such a soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

ILLUSTRATIONS

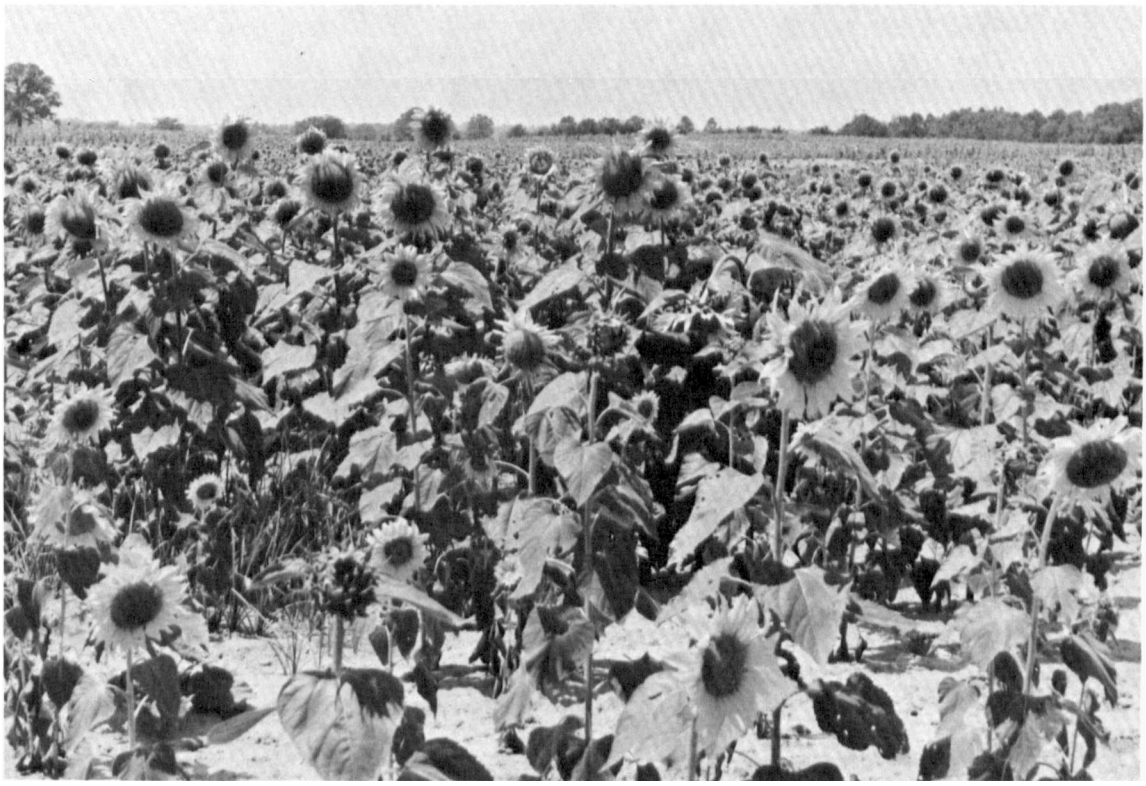


Figure 1.—Sunflowers grown commercially for oil on Broseley loamy fine sand, undulating.

Figure 2.—Rice and soybeans in the Amagon-Dundee soil map unit; pasture in foreground is in Loring map unit.

Figure 3.—Kobel-Amagon map unit developed for wetland wildlife habitat in a State-owned wildlife management area.

Figure 4.—Soybeans on Amagon silt loam. An eroded area of Loring silt loam, 8 to 12 percent slopes, is in background.

Figure 6.—Pasture on Ashton silt loam, occasionally flooded.

Figure 7.—Bosket fine sandy loam, undulating, can produce high yields of cotton.

Figure 8.—Wheat on Bosket fine sandy loam, undulating, gives good yields and helps prevent soil blowing.

Figure 9.—Native hardwoods on Doniphan-Gepp association, undulating.

Figure 10.—A well managed crop of soybeans on Dundee silt loam.

Figure 11.—Pits borrowed for gravel and sand for use in road construction.

Figure 12.—Native vegetation on Kobel silty clay loam is water-tolerant hardwoods.

Figure 13.—Dolomitic-limestone outcrop of the Cotter Formation in the western part of the county.

TABLES

TABLE 1.--TEMPERATURE AND PRECIPITATION DATA

[Recorded in the period 1951-74 at Pocahontas, Arkansas]

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days[1]	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	47.5	26.5	37.1	74	2	6	3.94	1.74	5.71	6	2.2
February---	52.2	29.9	41.1	75	5	23	3.55	2.03	4.78	6	2.3
March------	60.5	37.0	48.8	82	14	133	4.80	2.58	6.60	7	1.3
April------	72.5	47.4	59.9	88	27	303	4.81	2.41	6.75	8	.0
May--------	80.8	55.7	68.3	93	36	567	5.14	2.48	7.30	6	.0
June-------	88.7	64.6	76.7	101	48	801	3.11	1.86	4.22	5	.0
July-------	91.7	68.3	80.0	102	54	930	3.87	2.34	5.23	6	.0
August-----	90.8	66.1	78.5	102	53	884	2.79	1.21	4.08	5	.0
September--	84.2	59.3	71.7	98	41	651	3.85	1.04	6.10	5	.0
October----	74.7	47.5	61.1	91	27	353	2.50	.77	3.88	4	.0
November---	60.3	36.8	48.6	80	15	66	4.85	2.38	6.86	6	.4
December---	50.1	29.8	40.0	73	4	30	3.69	1.89	5.16	6	1.2
Year-----	71.2	47.4	59.3	104	0	4,747	46.90	38.70	54.69	70	7.4

[1]A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50° F).

TABLE 2.--FREEZE DATES IN SPRING AND FALL

[Recorded in the period 1951-74 at Pocahontas, Arkansas]

Probability	Temperature		
	24° F or lower	28° F or lower	32° F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	March 26	April 10	April 17
2 years in 10 later than--	March 22	April 6	April 13
5 years in 10 later than--	March 14	March 29	April 5
First freezing temperature in fall:			
1 year in 10 earlier than--	October 31	October 24	October 16
2 years in 10 earlier than--	November 4	October 28	October 20
5 years in 10 earlier than--	November 13	November 5	October 27

TABLE 3.--GROWING SEASON LENGTH

[Recorded in the period 1951-74 at Pocahontas, Arkansas]

Probability	Daily minimum temperature during growing season		
	Higher than 24° F	Higher than 28° F	Higher than 32° F
	Days	Days	Days
9 years in 10	224	205	186
8 years in 10	231	210	192
5 years in 10	243	220	205
2 years in 10	256	229	217
1 year in 10	262	234	223

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
1	Amagon silt loam	19,238	4.6
2	Arkana-Rock outcrop complex, 3 to 12 percent slopes	4,750	1.1
3	Ashton silt loam, occasionally flooded	17,013	4.1
4	Bosket fine sandy loam, undulating	16,496	4.0
5	Brocket gravelly fine sandy loam, 3 to 8 percent slopes	5,901	1.4
6	Brocket gravelly fine sandy loam, 8 to 12 percent slopes	9,232	2.2
7	Broseley loamy fine sand, undulating	6,192	1.5
8	Captina silt loam, 3 to 8 percent slopes	42,334	10.2
9	Captina silt loam, 8 to 12 percent slopes	7,334	1.8
10	Clarksville cherty silt loam, 8 to 12 percent slopes	1,888	0.5
11	Clarksville cherty silt loam, 12 to 20 percent slopes	4,025	1.0
12	Crowley silt loam	8,573	2.1
13	Doniphan cherty silt loam, 3 to 8 percent slopes	4,010	1.0
14	Doniphan cherty silt loam, 8 to 12 percent slopes	10,736	2.6
15	Doniphan-Gepp association, undulating	13,589	3.3
16	Dundee silt loam	12,521	3.0
17	Gepp very cherty silt loam, 8 to 12 percent slopes	55,559	13.5
18	Gepp very cherty silt loam, 12 to 20 percent slopes	12,067	2.9
19	Gepp-Doniphan association, rolling	29,427	7.1
20	Gepp-Ventris association, rolling	16,768	4.1
21	Gepp-Ventris association, steep	10,744	2.6
22	Hontas silt loam, frequently flooded	13,855	3.3
23	Jackport silty clay loam	5,809	1.4
24	Kobel silty clay loam	13,679	3.3
25	Loring silt loam, 3 to 8 percent slopes	8,659	2.1
26	Loring silt loam, 8 to 12 percent slopes	10,029	2.4
27	McCrory fine sandy loam	10,908	2.6
28	Patterson fine sandy loam	3,934	1.0
29	Peridge silt loam, 3 to 8 percent slopes	12,558	3.0

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE

[All yields were estimated for a high level of management in 1975. Absence of data indicates that the soil is not suited to the crop or the crop generally is not grown on the soil]

Soil name and map symbol	Cotton lint	Soybeans	Rice	Wheat	Common bermudagrass	Improved bermudagrass	Tall fescue
	Lb	Bu	Bu	Bu	AUM*	AUM*	AUM*
1---------- Amagon	575	35	120	---	7.5	9.0	9.0
2---------- Arkana	---	---	---	---	2.0	---	2.0
3---------- Ashton	---	35	---	40	5.0	---	6.0
4---------- Bosket	750	35	---	50	10.0	---	9.0
5---------- Brocket	---	25	---	40	5.0	7.0	7.0
6---------- Brocket	---	20	---	30	5.0	6.0	6.0
7---------- Broseley	500	35	---	45	---	---	---
8---------- Captina	---	---	---	---	7.0	---	7.0
9---------- Captina	---	---	---	---	6.0	---	6.0
10---------- Clarksville	---	---	---	---	2.0	---	3.0
11---------- Clarksville	---	---	---	---	2.0	---	3.0
12---------- Crowley	450	30	130	---	5.5	---	5.0
13---------- Doniphan	---	---	---	---	3.0	---	5.0
14---------- Doniphan	---	---	---	---	3.0	---	4.2
15**:							
Doniphan----------	---	---	---	---	3.0	---	4.2
Gepp----------	---	---	---	45	6.5	---	5.5
16---------- Dundee	750	40	---	---	---	9.0	9.0
17---------- Gepp	---	---	---	45	6.5	---	5.5
18---------- Gepp	---	---	---	---	5.5	---	5.0
19**:							
Gepp----------	---	---	---	---	5.5	---	5.0
Doniphan----------	---	---	---	---	3.0	---	3.4
20**:							
Gepp----------	---	---	---	---	5.5	---	5.0

See footnote at end of table.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Cotton lint	Soybeans	Rice	Wheat	Common bermuda-grass	Improved bermuda-grass	Tall fescue
	Lb	Bu	Bu	Bu	AUM*	AUM*	AUM*
20**: Ventris	---	---	---	---	2.5	---	2.5
21**:							
Gepp	---	---	---	---	4.0	---	4.0
Ventris	---	---	---	---	2.5	---	2.5
22---------- Hontas	---	35	---	---	5.0	8.5	7.5
23---------- Jackport	550	35	130	---	7.0	---	8.0
24---------- Kobel	550	40	130	---	---	10.0	9.0
25---------- Loring	650	25	---	35	6.0	8.0	5.0
26---------- Loring	500	20	---	30	6.0	8.0	5.0
27---------- McCrory	650	30	120	40	6.0	---	8.0
28---------- Patterson	550	30	---	30	---	8.0	7.0
29---------- Peridge	---	25	---	45	6.0	7.5	6.0
30**. Pits							
31---------- Razort	---	---	---	---	6.0	10.0	10.0
32----------	---	---	---	---	2.5	---	2.5

TABLE 6.--WOODLAND MANAGEMENT AND PRODUCTIVITY

[Only the soils suitable for production of commercial trees are listed in this table. Absence of data indicates that the information was not available. Site index was calculated at age 30 for eastern cottonwood, at age 35 for American sycamore, and at age 50 for all other species]

Soil name and map symbol	Woodland suitability group	Management concerns			Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Important trees	Site index	
1---------- Amagon	1w6	Slight	Severe	Moderate	Eastern cottonwood----- Water oak---------- Willow oak---------- Cherrybark oak--------- Nuttall oak---------- Green ash---------- Sweetgum----------	100 100 100 90 100 80 100	Eastern cottonwood, cherrybark oak, Nuttall oak, Shumard oak, water oak, willow oak, sweetgum, American sycamore, green ash.
2*: Arkana----------	5c2	Slight	Moderate	Moderate	Shortleaf pine--------- Southern red oak------- Eastern redcedar------- White oak----------	55 55 35 ---	Shortleaf pine, eastern redcedar.
Rock outcrop.							
3---------- Ashton	1o7	Slight	Slight	Slight	Black oak---------- Northern red oak------- Sweetgum---------- Shumard oak----------	80 85 --- ---	Black walnut, sweetgum, cherrybark oak, loblolly pine.
4---------- Bosket	2o4	Slight	Slight	Slight	Eastern cottonwood----- Green ash---------- Sweetgum---------- Cherrybark oak--------- Water oak---------- Willow oak----------	100 80 90 90 90 90	Eastern cottonwood, green ash, sweetgum, cherrybark oak, water oak, willow oak, Shumard oak, American sycamore.
5, 6---------- Brocket	3o7	Slight	Slight	Slight	Black oak---------- Shortleaf pine---------	70 70	Yellow-poplar, shortleaf pine, loblolly pine.
7---------- Broseley	4s5	Slight	Slight	Moderate	Eastern cottonwood-----	80	Eastern cottonwood, American sycamore.
8, 9---------- Captina	4o7	Slight	Slight	Slight	Shortleaf pine--------- Southern red oak------- Eastern redcedar------- Black locust---------- Black walnut----------	60 65 40 --- ---	Shortleaf pine, eastern redcedar, black walnut,** black locust,** black oak, loblolly pine.
10---------- Clarksville	4f7	Slight	Slight	Slight	White oak---------- Shortleaf pine--------- Black oak----------	55 55 60	Shortleaf pine, loblolly pine, black oak,** black locust.**
11---------- Clarksville	4f8	Slight	Moderate	Moderate	White oak---------- Shortleaf pine--------- Black oak----------	55 55 60	Shortleaf pine, loblolly pine, black oak,** black locust.
12---------- Crowley	3w9	Slight	Severe	Moderate	Loblolly pine---------- Water oak----------	80 80	Loblolly pine, American sycamore.

See footnotes at end of table.

TABLE 6.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Woodland suitability group	Management concerns			Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Important trees	Site index	
13, 14---------- Doniphan	4o1	Slight	Slight	Slight	Shortleaf pine--------- Eastern redcedar-------	60 40	Loblolly pine, shortleaf pine, eastern redcedar.
15*: Doniphan----------	4o1	Slight	Slight	Slight	Shortleaf pine--------- Eastern redcedar-------	60 40	Loblolly pine, shortleaf pine, eastern redcedar.
Gepp----------	3o7	Slight	Slight	Slight	White oak-------------- Shortleaf pine--------- Black oak-------------- Northern red oak-------	70 75 70 70	Black walnut,** loblolly pine, shortleaf pine, eastern redcedar, black oak.**
16---------- Dundee	2w5	Slight	Moderate	Slight	Cherrybark oak--------- Eastern cottonwood----- Sweetgum--------------- Water oak---------------	105 100 100 95	Cherrybark oak, eastern cottonwood, sweetgum, water oak, yellow-poplar.
17, 18---------- Gepp	3o7	Slight	Slight	Slight	White oak-------------- Shortleaf pine--------- Black oak-------------- Northern red oak-------	70 75 70 70	Black walnut, loblolly pine, shortleaf pine, eastern redcedar, black oak.**
19*: Gepp----------	3o7	Slight	Slight	Slight	White oak-------------- Shortleaf pine--------- Black oak-------------- Northern red oak-------	70 75 70 70	Black walnut,** loblolly pine, shortleaf pine, eastern redcedar, black oak.**
Doniphan----------	4r2	Moderate	Moderate	Moderate	Shortleaf pine--------- Eastern redcedar-------	60 40	Loblolly pine, shortleaf pine, eastern redcedar.
20*, 21*: Gepp----------	3o7	Slight	Slight	Moderate	White oak-------------- Shortleaf pine--------- Black oak-------------- Northern red oak-------	70 75 70 70	Black walnut,** loblolly pine, shortleaf pine, eastern redcedar, black oak.**
Ventris----------	5c2	Slight	Slight	Moderate	Shortleaf pine--------- Southern red oak------- Eastern redcedar-------	55 55 35	Shortleaf pine, loblolly pine, eastern redcedar.
22---------- Hontas	2w8	Slight	Moderate	Moderate	Shortleaf pine--------- Shumard oak------------ Sweetgum--------------- Eastern cottonwood----- American sycamore------ Black walnut----------- Water oak---------------	80 --- --- --- --- --- ---	Shortleaf pine, loblolly pine, eastern cottonwood, American sycamore, Shumard oak, sweetgum.
23---------- Jackport	2w6	Slight	Severe	Moderate	Green ash-------------- Cherrybark oak--------- Water oak--------------- Willow oak-------------- Sweetgum---------------	80 90 90 90 80	Green ash, eastern cottonwood, Nuttall oak, willow oak, sweetgum, American sycamore.

See footnotes at end of table.

TABLE 6.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Woodland suitability group	Management concerns			Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Important trees	Site index	
24---------- Kobel	2w6	Slight	Severe	Moderate	Water oak----------	90	Eastern cottonwood, American sycamore, sweetgum, Nuttall oak.
					Green ash----------	85	
					Eastern cottonwood-----	---	
					Cherrybark oak---------	---	
					Sweetgum----------	---	
					Pecan----------	---	
					American sycamore------	---	
25, 26---------- Loring	3o7	Slight	Slight	Slight	Shortleaf pine---------	60	Loblolly pine, yellow-poplar,** shortleaf pine.
					Southern red oak-------	74	
					Loblolly pine----------	---	
27---------- McCrory	3w6	Slight	Severe	Moderate	Sweetgum----------	85	Sweetgum, American sycamore.
					Water oak----------	80	
28---------- Patterson	2s5	Slight	Moderate	Moderate	Green ash----------	70	Green ash, cherrybark oak, Nuttall oak, water oak, willow oak, sweetgum, American sycamore.
					Cherrybark oak---------	95	
					Nuttall oak----------	85	
					Water oak----------	90	
					Willow oak----------	85	
					Sweetgum----------	90	
29---------- Peridge	3o7	Slight	Slight	Slight	Shortleaf pine---------	70	Shortleaf pine, loblolly pine, black walnut,** black locust,** black oak,** white ash, eastern redcedar.
					Southern red oak-------	70	
					Eastern redcedar-------	50	
					Black walnut----------	---	
					White oak----------	---	
					White ash----------	---	
					Black cherry----------	---	
					Black locust----------	---	
30*: Pits.							
31---------- Razort	2o7	Slight	Slight	Slight	Shortleaf pine---------	80	Shortleaf pine, loblolly pine, black oak, white oak, black walnut, American sycamore, eastern cottonwood, sweetgum, cherrybark oak, shumard oak.
					Southern red oak-------	80	
					Eastern cottonwood-----	90	
					American sycamore------	85	
					Sweetgum----------	80	
					White oak----------	---	
32*: Ventris----------	5c2	Slight	Slight	Moderate	Shortleaf pine---------	55	Shortleaf pine, loblolly pine, eastern redcedar.
					Southern red oak-------	55	
					Eastern redcedar-------	35	
Rock outcrop.							

* See map unit description for the composition and behavior of the map unit.
** Confined to northeast slopes, cones, benches, and slope bases.

TABLE 7.--WILDLIFE HABITAT POTENTIALS

[See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Potential for habitat elements								Potential as habitat for		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
1---------- Amagon	Fair	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
2*: Arkana----------	Fair	Good	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
Rock outcrop.											
3---------- Ashton	Fair	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
4---------- Bosket	Good	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
5---------- Brocket	Fair	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
6---------- Brocket	Fair	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
7---------- Broseley	Poor	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
8, 9---------- Captina	Fair	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
10, 11---------- Clarksville	Poor	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
12---------- Crowley	Fair	Fair	Fair	Fair	Good	Fair	Good	Good	Fair	Fair	Good
13, 14---------- Doniphan	Fair	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
15*: Doniphan----------	Fair	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Gepp----------	Fair	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
16---------- Dundee	Fair	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
17---------- Gepp	Fair	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
18---------- Gepp	Poor	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
19*: Gepp----------	Poor	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Doniphan----------	Poor	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
20*: Gepp----------	Poor	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.

See footnote at end of table.

TABLE 7.--WILDLIFE HABITAT POTENTIALS--Continued

Soil name and map symbol	Potential for habitat elements								Potential as habitat for		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
20*: Ventris	Fair	Good	Good	Fair	Fair	Fair	Very poor.	Very poor.	Good	Fair	Very poor.
21*: Gepp	Fair	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Ventris	Fair	Good	Good	Fair	Fair	Fair	Very poor.	Very poor.	Good	Fair	Very poor.
22. Hontas	Poor	Fair	Fair	Good	Good	Good	Poor	Poor	Fair	Good	Poor
23. Jackport	Fair	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
24. Kobel	Fair	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
25, 26. Loring	Fair	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
27. McCrory	Fair	Fair	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
28. Patterson	Fair	Good	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
29. Peridge	Fair	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
30*. Pits											
31. Razort	Poor	Fair	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
32*: Ventris	Fair	Good	Good	Fair	Fair	Fair	Very poor.	Very poor.	Good	Fair	Very poor.
Rock outcrop.											

* See map unit description for the composition and behavior of the map unit.

TABLE 8.--BUILDING SITE DEVELOPMENT

[Some of the terms used in this table to describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of data indicates that the soil was not rated]

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets
1 Amagon	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, low strength.
2*: Arkana	Severe: depth to rock.	Severe: shrink-swell.	Severe: depth to rock, shrink-swell.	Severe: slope, shrink-swell, depth to rock.	Severe: low strength, shrink-swell.
Rock outcrop.					
3 Ashton	Severe: floods.	Severe: floods.	Severe: floods.	Severe: floods.	Severe: floods, low strength.
4 Bosket	Slight	Slight	Slight	Slight	Moderate: low strength.
5 Brocket	Moderate: small stones.	Slight	Slight	Moderate: slope.	Moderate: low strength.
6 Brocket	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, low strength.
7 Broseley	Slight	Slight	Slight	Slight	Moderate: low strength.
8 Captina	Moderate: depth to rock.	Moderate: low strength.	Moderate: low strength.	Moderate: slope, low strength.	Moderate: low strength.
9 Captina	Moderate: slope, depth to rock.	Moderate: slope, low strength.	Moderate: slope, low strength.	Severe: slope.	Moderate: slope, low strength.
10 Clarksville	Moderate: small stones.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: frost action.
11 Clarksville	Moderate: small stones.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
12 Crowley	Severe: wetness, too clayey.	Severe: shrink-swell, low strength, wetness.	Severe: shrink-swell, low strength, wetness.	Severe: shrink-swell, low strength, wetness.	Severe: low strength, shrink-swell.
13 Doniphan	Severe: too clayey.	Severe: low strength.	Severe: low strength.	Severe: low strength.	Severe: low strength.
14 Doniphan	Severe: too clayey.	Severe: low strength.	Severe: low strength.	Severe: slope, low strength.	Severe: low strength.
15*: Doniphan	Severe: too clayey.	Severe: low strength.	Severe: low strength.	Severe: slope, low strength.	Severe: low strength.

See footnote at end of table.

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets
15*:					
Gepp	Severe: too clayey.	Moderate: low strength, shrink-swell, slope.	Moderate: low strength, shrink-swell, slope.	Severe: slope.	Moderate: low strength, shrink-swell, slope.
16---------- Dundee	Severe: wetness.	Moderate: wetness, shrink-swell.	Severe: wetness.	Moderate: wetness, shrink-swell.	Moderate: wetness, shrink-swell.
17---------- Gepp	Severe: too clayey.	Moderate: low strength, shrink-swell, slope.	Moderate: low strength, shrink-swell, slope.	Severe: slope.	Moderate: low strength, shrink-swell, slope.
18---------- Gepp	Severe: slope, too clayey.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
19*:					
Gepp	Severe: slope, too clayey.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Doniphan	Severe: slope, too clayey.	Severe: slope, low strength.	Severe: slope, low strength.	Severe: slope, low strength.	Severe: slope, low strength.
20*, 21*:					
Gepp	Severe: slope, too clayey.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
Ventris	Severe: slope, too clayey, depth to rock.	Severe: slope, low strength, shrink-swell.	Severe: slope, depth to rock, low strength.	Severe: slope, depth to rock, low strength.	Severe: slope, low strength, shrink-swell.
22---------- Hontas	Severe: floods, wetness.	Severe: floods.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods.
23---------- Jackport	Severe: wetness, too clayey.	Severe: wetness, low strength, shrink-swell.	Severe: wetness, low strength, shrink-swell.	Severe: wetness, low strength, shrink-swell.	Severe: wetness, low strength, shrink-swell.
24---------- Kobel	Severe: wetness, too clayey.	Severe: wetness, shrink-swell.	Severe: wetness, low strength, shrink-swell.	Severe: wetness, low strength, shrink-swell.	Severe: wetness, low strength, shrink-swell.
25---------- Loring	Moderate: low strength, wetness.	Moderate: low strength.	Moderate: low strength.	Moderate: slope, low strength.	Moderate: low strength.
26---------- Loring	Moderate: slope, wetness, low strength.	Moderate: slope, low strength.	Moderate: slope, low strength.	Severe: slope.	Moderate: slope, low strength.
27---------- McCrory	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
28---------- Patterson	Severe: wetness, too sandy, cutbanks cave.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.

See footnote at end of table.

TABLE 8.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets
29---------- Peridge	Moderate: too clayey.	Slight----------	Slight----------	Moderate: slope.	Moderate: low strength.
30*. Pits					
31---------- Razort	Severe: floods.	Severe: floods.	Severe: floods.	Severe: floods.	Severe: floods.
32*: Ventris----------	Severe: too clayey, depth to rock.	Severe: low strength, shrink-swell.	Severe: depth to rock, low strength, shrink-swell.	Severe: depth to rock, low strength, shrink-swell.	Severe: low strength, shrink-swell.
Rock outcrop.					

* See map unit description for the composition and behavior of the map unit.

TABLE 9.--SANITARY FACILITIES

[Some of the terms used in this table to describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," "good," "fair," and other terms used to rate soils. Absence of an entry means soil was not rated]

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1 Amagon	Severe: wetness, percs slowly.	Slight	Severe: wetness.	Severe: wetness.	Poor: wetness.
2*: Arkana	Severe: depth to rock, percs slowly.	Severe: slope, depth to rock.	Severe: depth to rock.	Moderate: slope.	Fair: thin layer.
Rock outcrop.					
3 Ashton	Severe: floods.	Severe: floods.	Severe: floods.	Severe: floods.	Good.
4 Bosket	Slight	Moderate: slope, seepage.	Severe: seepage.	Slight	Good.
5 Brocket	Slight	Moderate: slope, seepage.	Slight	Moderate: slope.	Fair: small stones.
6 Brocket	Moderate: slope.	Severe: slope, seepage.	Slight	Moderate: slope.	Fair: slope.
7 Broseley	Slight	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: too sandy.
8 Captina	Severe: depth to rock, percs slowly.	Moderate: slope, depth to rock.	Severe: depth to rock.	Slight	Fair: too clayey.
9 Captina	Severe: depth to rock, percs slowly.	Severe: slope.	Severe: depth to rock.	Moderate: slope.	Fair: slope, too clayey.
10 Clarksville	Moderate: slope.	Severe: seepage, small stones.	Severe: seepage, small stones.	Severe: seepage.	Poor: seepage, small stones.
11 Clarksville	Severe: slope.	Severe: seepage, small stones.	Severe: seepage, small stones.	Severe: seepage.	Poor: seepage, small stones.
12 Crowley	Severe: percs slowly, wetness.	Slight	Severe: too clayey, wetness.	Severe: wetness.	Poor: too clayey.
13 Doniphan	Slight	Moderate: slope, seepage, small stones.	Severe: too clayey, small stones.	Slight	Poor: small stones, too clayey.
14 Doniphan	Moderate: slope.	Severe: slope.	Severe: too clayey, small stones.	Moderate: slope.	Poor: small stones, too clayey.
15*: Doniphan	Moderate: slope,	Severe: slope.	Severe: too clayey,	Moderate: slope.	Poor: small stones,

TABLE 9.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
15*:					
Gepp	Moderate: percs slowly, slope.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey.
16---------- Dundee	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey.
17---------- Gepp	Moderate: percs slowly, slope.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey.
18---------- Gepp	Severe: slope.	Severe: slope.	Severe: too clayey.	Severe: slope.	Poor: slope, too clayey.
19*:					
Gepp	Severe: slope.	Severe: slope.	Severe: too clayey.	Severe: slope.	Poor: slope, too clayey.
Doniphan	Severe: slope.	Severe: slope.	Severe: too clayey, small stones.	Severe: slope.	Poor: slope, small stones, too clayey.
20*:					
Gepp	Severe: slope.	Severe: slope.	Severe: too clayey.	Severe: slope.	Poor: slope, too clayey.
Ventris	Severe: slope, percs slowly.	Severe: slope, depth to rock.	Severe: too clayey, depth to rock.	Severe: slope.	Poor: slope, too clayey.
21*:					
Gepp	Severe: slope.	Severe: slope.	Severe: too clayey, slope.	Severe: slope.	Poor: slope, too clayey.
Ventris	Severe: slope, percs slowly.	Severe: slope, depth to rock.	Severe: too clayey, depth to rock.	Severe: slope.	Poor: slope, too clayey.
22---------- Hontas	Severe: floods, wetness.	Severe: floods.	Severe: floods, wetness.	Severe: floods, wetness.	Good.
23---------- Jackport	Severe: wetness, percs slowly.	Slight----------	Severe: wetness, too clayey.	Severe: wetness.	Poor: wetness, too clayey.
24---------- Kobel	Severe: wetness, percs slowly.	Slight----------	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, wetness.
25---------- Loring	Severe: percs slowly.	Moderate: slope.	Slight----------	Slight----------	Good.
26---------- Loring	Severe: percs slowly.	Severe: slope.	Slight----------	Moderate: slope.	Fair: slope.
27---------- McCrory	Severe: wetness, percs slowly.	Slight----------	Severe: wetness.	Severe: wetness.	Poor: wetness.

See footnote at end of table.

TABLE 9.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
28---------- Patterson	Severe: wetness.	Severe: seepage.	Severe: wetness, seepage, too sandy.	Severe: wetness, seepage.	Fair: thin layer.
29---------- Peridge	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight----------	Fair: too clayey.
30*. Pits					
31---------- Razort	Severe: floods.	Severe: floods.	Severe: floods.	Severe: floods.	Good.
32*: Ventris----------	Severe: percs slowly.	Severe: depth to rock.	Severe: too clayey, depth to rock.	Slight----------	Poor: too clayey.
Rock outcrop.					

* See map unit description for the composition and behavior of the map unit.

TABLE 10.--CONSTRUCTION MATERIALS

[See text for terms used in this table to describe restrictive soil features are defined in the Glossary. See

TABLE 10.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
19*: Doniphan	Poor: low strength.	Unsuited	Unsuited	Poor: slope, small stones.
20*, 21*: Gepp	Fair: low strength, shrink-swell, slope.	Unsuited	Unsuited	Poor: small stones, thin layer.
Ventris	Poor: thin layer, low strength, shrink-swell.	Unsuited	Unsuited	Poor: slope, thin layer, too clayey.
22--- Hontas	Fair: low strength, wetness.	Unsuited	Unsuited	Good.
23--- Jackport	Poor: wetness, low strength, shrink-swell.	Unsuited	Unsuited	Poor: wetness, too clayey.
24--- Kobel	Poor: wetness, shrink-swell.	Unsuited	Unsuited	Poor: too clayey, wetness.
25, 26--- Loring	Fair: low strength.	Unsuited	Unsuited	Good.
27--- McCrory	Poor: wetness.	Poor: excess fines.	Unsuited	Poor: wetness.
28--- Patterson	Fair: wetness.	Poor: excess fines.	Unsuited	Good.
29--- Peridge	Fair: low strength.	Unsuited	Unsuited	Fair: thin layer.
30*. Pits				
31--- Razort	Fair: low strength.	Unsuited	Unsuited	Good.
32*: Ventris	Poor: thin layer, low strength, shrink-swell.	Unsuited	Unsuited	Poor: thin layer, too clayey.
Rock outcrop.				

* See map unit description for the composition and behavior of the map unit.

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Grassed waterways

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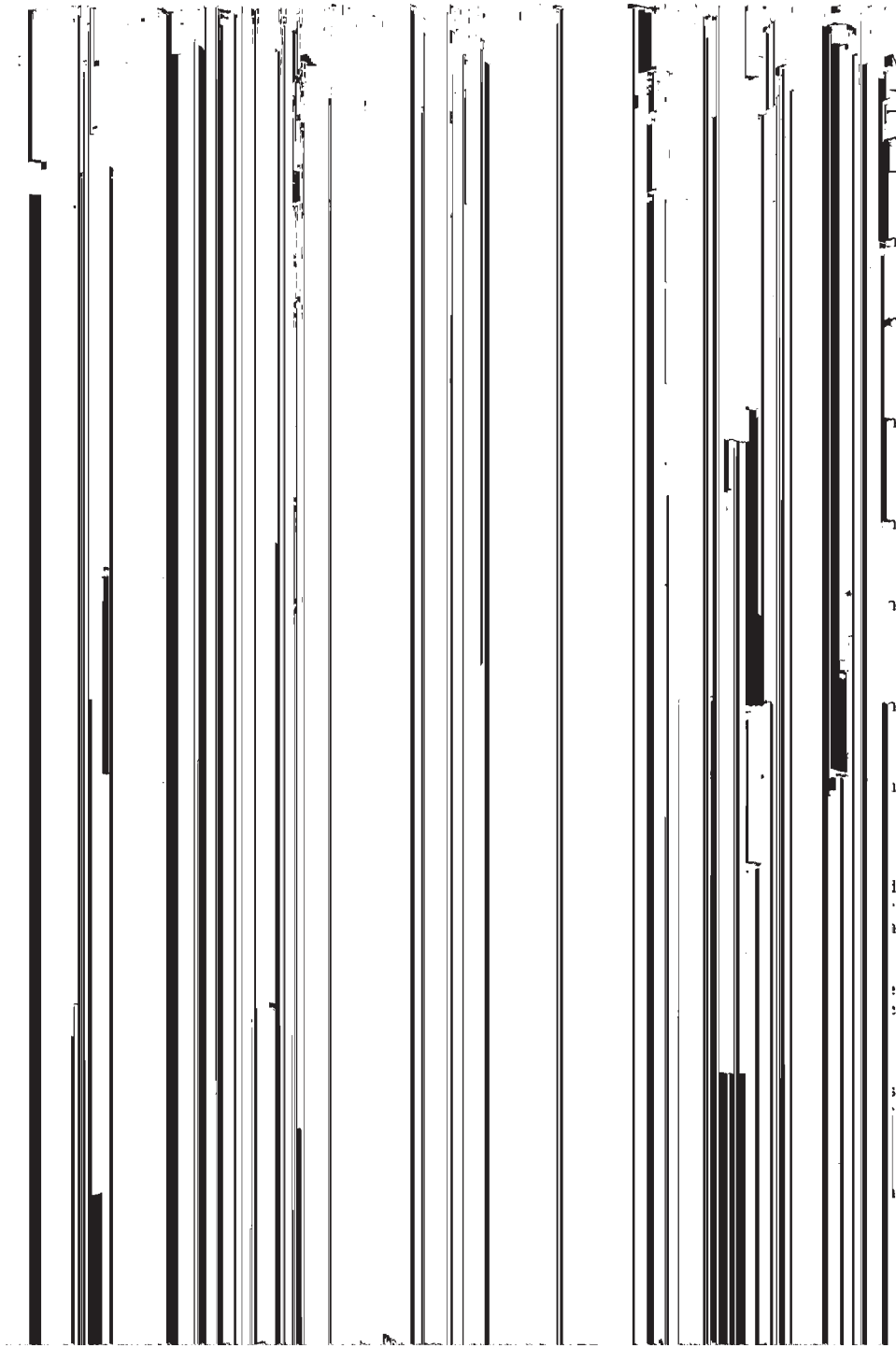

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Features affecting--			
ainage	Irrigation	Terraces and diversions	Grassed waterways
needed-----	Complex slope	Complex slope	Slope.
able------	Wetness, slow intake.	Not needed-----	Wetness, percs slowly.
needed-----	Complex slope	Complex slope	Slope.
needed-----	Complex slope	Complex slope	Slope.
needed-----	Droughty, slope.	Slope----------	Slope, droughty.
needed-----	Complex slope	Complex slope	Slope.
needed-----	Erodes easily, slope, slow intake.	Depth to rock, erodes easily, slope.	Erodes easily, percs slowly, slope.
ls, outlets, ess.	Favorable------	Not needed-----	Not needed.
ss, s slowly.	Slow intake, wetness.	Wetness--------	Wetness.
slowly, outlets.	Slow intake, wetness.	Wetness, percs slowly.	Wetness, percs slowly.
needed-----	Rooting depth, erodes easily, slope.	Erodes easily, slope.	Rooting depth, erodes easily, slope.

MENT--Continued

Features affecting--			
Drainage	Irrigation	Terraces and diversions	Grassed waterways
tness, ercs slowly.	Wetness	Wetness	Wetness.
tbanks cave, etness.	Favorable	Not needed	Not needed.
t needed	Complex slope	Favorable	Slope.
t needed	Floods	Floods	Favorable.
t needed	Erodes easily, slope, slow intake.	Depth to rock, erodes easily, slope.	Erodes easily, percs slowly, slope.

e map unit.

TABLE 12.--RECREATIONAL DEVELOPMENT

[Some of the terms used in this table to describe restrictive soil features are defined in the Glossary. See

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
1---------- Amagon	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
2*: Arkana----------	Severe: percs slowly.	Moderate: slope.	Severe: slope, percs slowly.	Slight.
Rock outcrop.				
3---------- Ashton	Severe: floods.	Moderate: floods.	Moderate: floods.	Slight.
4---------- Bosket	Slight----------	Slight----------	Slight----------	Slight.
5---------- Brocket	Slight----------	Slight----------	Moderate: slope.	Slight.

TABLE 12.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
17--- Gepp	Moderate: slope, small stones.	Moderate: slope, small stones.	Severe: slope, small stones.	Moderate: small stones.
18--- Gepp	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope, small stones.
19*:				
Gepp---	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope, small stones.
Doniphan---	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: small stones, slope.
20*, 21*:				
Gepp---	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope, small stones.
Ventris---	Severe: slope, percs slowly.	Severe: slope.	Severe: slope, percs slowly.	Moderate: slope.
22--- Hontas	Severe: floods.	Moderate: floods.	Severe: floods.	Moderate: floods.
23--- Jackport	Severe: wetness, percs slowly, too clayey.	Severe: wetness, too clayey.	Severe: wetness, percs slowly, too clayey.	Severe: wetness, too clayey.
24--- Kobel	Severe: wetness, percs slowly, too clayey.	Severe: wetness, too clayey.	Severe: wetness, too clayey, percs slowly.	Severe: wetness, too clayey.
26--- Loring	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight.
27--- McCrory	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
28---	Moderate:	Moderate:	Moderate:	Moderate:

TABLE 13.--ENGINEERING PROPERTIES AND CLASSIFICATIONS

[The symbol < means less than; > means more than. Absence of an entry means data were not estimated]

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
1---------- Amagon	0-6	Silt loam-------	ML, CL, CL-ML	A-4	0	---	100	85-100	85-100	<30	NP-10
	6-30	Silt loam, silty clay loam.	CL	A-6, A-7	0	---	100	85-100	85-100	30-45	11-22
	30-72	Silt loam, loam, silty clay loam.	ML, CL	A-4, A-6, A-7	0	---	100	80-100	60-100	20-45	1-22
2*:											
Arkana----------	0-8	Silty clay loam	ML, CL-ML, CL	A-4, A-6	0	100	100	90-100	70-95	<35	NP-15
	8-33	Clay, silty clay.	CH	A-7	0-10	70-90	70-85	65-85	60-80	51-80	31-50
	33-35	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Rock outcrop.											
3---------- Ashton	0-8	Silt loam-------	ML, CL	A-4	0	95-100	90-100	75-100	60-95	<35	NP-10
	8-72	Silt loam, silty clay loam.	CL, CL-ML	A-4, A-6	0	95-100	90-100	85-100	75-100	25-42	5-20
4---------- Bosket	0-14	Fine sandy loam	SM	A-2, A-4	0	100	100	75-100	25-45	<20	NP-3
	14-44	Sandy clay loam, clay loam, sandy loam.	SC, SM-SC, CL-ML, CL	A-2, A-4, A-6	0	100	100	85-100	30-70	25-40	5-17
	44-72	Fine sandy loam, sandy loam, sand, loamy fine sand.	SM	A-2, A-4	0	100	100	65-100	15-45	<20	NP-3
5, 6---------- Brocket	0-16	Gravelly fine sandy loam.	SM, SM-SC	A-2, A-1, A-4	0	90-100	65-85	40-70	20-45	<20	NP-7
	16-58	Sandy clay loam, clay loam, loam.	CL, SC	A-4, A-6	0	100	100	80-95	36-80	25-38	8-20
	58-72	Fine sandy loam, sandy loam, sandy clay loam.	SM, SM-SC, CL-ML, ML	A-4, A-2	0	100	100	60-85	30-55	<25	NP-9
7---------- Broseley	0-26	Loamy fine sand	SM	A-2, A-4	0	100	100	60-95	20-50	<20	NP-3
	26-44	Fine sandy loam, sandy clay loam.	SM, SC, SM-SC	A-4, A-6	0	100	100	65-95	36-50	20-35	2-15
	44-72	Stratified loamy sand to sandy loam.	SM, SM-SC	A-4, A-2	0	100	100	60-80	20-50	<25	NP-7
8, 9---------- Captina	0-4	Silt loam-------	ML, CL-ML	A-4	0	95-100	90-100	85-100	75-95	<35	NP-7
	4-20	Silty clay loam, silt loam.	CL-ML, CL	A-4, A-6	0	95-100	95-100	90-100	85-95	20-45	5-20
	20-72	Silty clay loam, silt loam, cherty silty clay loam.	CL, GM-GC, GC, CL-ML	A-4, A-6	0-20	60-100	55-100	45-100	45-95	20-40	5-20

See footnote at end of table.

TABLE 13.--ENGINEERING PROPERTIES AND CLASSIFICATIONS--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
10, 11---------- Clarksville	0-16	Cherty silt loam.	GC, GM, CL	A-6, A-4	5-20	45-75	45-75	35-65	25-55	20-40	5-15
	16-40	Very cherty	GC,	A-2-6,	5-20	30-70	10-60	10-50	5-45	30-40	15-25
		loam, very cherty silty clay.		A-6							
	40-72	Very cherty silty clay.	GC	A-2, A-1 A-7	5-20	30-70	10-60	10-50	10-45	55-65	35-45
12---------- Crowley	0-16	Silt loam-------	ML, CL-ML, CL	A-4	0	100	100	95-100	80-100	<30	NP-10
	16-60	Silty clay, silty clay loam.	CH, CL	A-7	0	100	100	95-100	85-100	41-60	20-35
13, 14---------- Doniphan	0-16	Cherty silt loam	CL-ML, ML, GM, GM-GC	A-4	5-30	50-80	45-70	45-65	35-60	20-30	2-8
	16-72	Clay, silty clay	CH	A-7	0-5	90-100	90-100	85-100	70-95	51-70	25-35
15*:											
Doniphan----------	0-16	Cherty silt loam	CL-ML, ML, GM GM-GC	A-4	5-30	50-80	45-70	45-65	35-60	20-30	2-8
	16-72	Clay, silty clay	CH	A-7	0-5	90-100	90-100	85-100	70-95	51-70	25-35
Gepp----------	0-7	Very cherty silt loam.	GM, GC, SM-SC	A-1, A-2	10-30	30-70	20-50	10-40	5-20	<30	NP-10
	7-13	Cherty silty clay loam, cherty clay loam, silty clay loam.	CL	A-6, A-4	0-15	65-100	65-100	55-95	51-90	25-40	8-20
	13-72	Clay----------	MH, CH	A-7	0-15	70-100	70-100	65-100	60-95	55-75	25-40
16---------- Dundee	0-4	Silt loam-------	CL, CL-ML, ML	A-4, A-6	0	100	100	90-100	75-98	20-35	4-11
	4-40	Loam, silty clay loam, silt loam.	CL	A-6, A-7	0	100	100	90-100	70-95	28-44	12-22
	40-72	Silty clay, loam, silt loam	CH, ML, CL	A-7, A-6 A-4	0	100	100	90-100	80-95	40-75	10-50
17, 18---------- Gepp	0-7	Very cherty silt loam.	GM, GC	A-1, A-2	10-30	30-70	20-50	10-40	5-20	<30	NP-10
	7-13	Cherty silty clay loam, cherty clay loam, silty clay loam.	CL	A-6, A-4	0-15	65-100	65-100	55-95	51-90	25-40	8-20
	13-72	Clay----------	MH, CH	A-7	0-15	70-100	70-100	65-100	60-95	55-75	25-40
19*:											
Gepp----------	0-7	Very cherty	GM, GC,	A-1, A-2	10-30	30-70	20-50	10-40	5-20	<30	NP-10

TABLE 13.--ENGINEERING PROPERTIES AND CLASSIFICATIONS--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
19*:											
Doniphan	0-16	Cherty silt loam	CL-ML, GM, GM-GC	A-4	5-30	50-80	45-70	45-65	35-60	20-30	2-8
	16-72	Clay, silty clay	CH	A-7	0-5	90-100	90-100	85-100	70-95	51-70	25-35
20*, 21*:											
Gepp	0-7	Cherty silt loam	GM, GC, ML, CL	A-2, A-4	10-25	45-75	45-75	35-65	25-55	<30	NP-10
	7-13	Cherty silty clay loam, cherty clay loam, silty clay loam.	CL	A-6, A-4	0-15	65-100	65-100	55-95	51-90	25-40	8-20
	13-72	Clay	MH, CH	A-7	0-15	70-100	70-100	65-100	60-95	55-75	25-40
Ventris	0-5	Silt loam	ML, CL, GM, GC	A-4, A-6	3-6	50-85	45-80	40-70	36-65	<35	NP-15
	5-32	Clay, silty clay	CH	A-7	0	70-95	70-95	65-95	60-90	50-80	35-55
	32-34	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
22 Hontas	0-72	Silt loam	CL, CL-ML	A-4, A-6	0	100	100	90-100	85-95	20-35	5-15
23 Jackport	0-12	Silty clay loam	CL, CH	A-6, A-7	0	100	100	95-100	85-100	30-55	12-30
	12-58	Silty clay, clay	CH	A-7	0	100	100	95-100	90-100	51-85	25-55
	58-72	Clay, silty clay, silty clay loam.	CH	A-7	0	100	100	95-100	90-100	51-85	25-55
24 Kobel	0-10	Silty clay loam	CL, CH	A-7	0	100	100	95-100	85-95	45-55	25-35
	10-72	Clay, silty clay, silty clay loam.	CH, CL	A-7	0	100	100	95-100	90-95	45-75	25-50
25, 26 Loring	0-8	Silt loam	ML, CL-ML, CL	A-4, A-6	0	100	100	95-100	90-100	20-35	4-15
	8-24	Silt loam, silty clay loam.	CL	A-6, A-7	0	100	100	95-100	90-100	35-45	15-25
	24-72	Silt loam, silty clay loam.	CL, ML	A-4, A-6, A-7	0	100	100	95-100	90-100	30-45	8-25
27 McCrory	0-19	Fine sandy loam	SM, ML	A-4	0	100	100	70-95	40-65	<25	NP-3
	19-28	Sandy clay loam, fine sandy loam, loam.	SM, SC, ML, CL	A-4	0	100	100	70-95	40-85	<30	NP-10
	28-49	Sandy clay loam, fine sandy loam, loam.	SM, SC, ML, CL	A-4	0	100	100	70-95	40-85	<30	NP-10
	49-72	Loamy fine sand, fine sandy loam.	SM, ML	A-4, A-2	0	100	100	60-95	25-75	<30	NP-3
28 Patterson	0-8	Fine sandy loam	SM	A-2, A-4	0	100	100	75-100	25-45	---	NP
	8-34	Fine sandy loam,	SM, SM-SC	A-2, A-4	0	100	100	75-100	25-50	<25	NP-7

TABLE 13.--ENGINEERING PROPERTIES AND CLASSIFICATIONS--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
31----------	0-12	Silt loam-------	ML, CL-ML	A-4	0	75-100	70-100	65-90	65-90	<25	NP-7
Razort	12-46	Silt loam, loam, clay loam.	ML, CL, CL-ML	A-4, A-6	0	85-100	85-100	75-85	70-80	25-40	7-15
	46-66	Gravelly sandy loam, very cherty silt loam.	GM, GC, ML, CL-ML	A-2, A-4	0	25-75	20-70	20-65	20-60	25-35	2-15
32*:											
Ventris----------	0-5	Silt loam-------	ML, CL, GM, GC	A-4, A-6	3-6	50-85	45-80	40-70	36-65	<35	NP-15
	5-32	Clay, silty clay	CH	A-7	0	70-95	70-95	65-95	60-90	50-80	35-55
	32-34	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Rock outcrop.											

* See map unit description for the composition and behavior of the map unit.

TABLE 14.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS

[The symbol < means less than; > means greater than. The erosion tolerance factor (T) is for the entire profile. Absence of an entry means data were not available or were not estimated]

Soil name and map symbol	Depth	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors	
						K	T
	In	In/hr	In/in	pH			
1----------	0-6	0.6-2.0	0.16-0.24	4.5-6.0	Low----------	0.43	5
Amagon	6-30	0.06-0.2	0.16-0.24	4.5-6.0	Moderate-------	0.37	
	30-72	0.06-0.6	0.15-0.24	5.1-7.3	Low----------	0.43	
2*:							
Arkana----------	0-8	0.6-2.0	0.16-0.24	5.6-7.8	Low----------	0.37	2
	8-33	<0.06	0.12-0.18	5.6-7.8	High----------	0.32	
	33-35	---	---	---	----------	---	
Rock outcrop.							
3----------	0-8	0.6-2.0	0.16-0.23	5.6-7.3	Low----------	0.28	4
Ashton	8-72	0.6-2.0	0.18-0.23	5.6-7.3	Low----------	0.43	
4----------	0-14	2.0-6.0	0.10-0.15	5.1-6.5	Low----------	0.24	4
Bosket	14-44	0.6-2.0	0.10-0.20	5.1-6.5	Low----------	0.32	
	44-72	>2.0	0.02-0.15	5.1-6.5	Low----------	0.24	
5, 6----------	0-16	0.6-2.0	0.08-0.16	4.5-6.5	Low----------	0.24	5
Brocket	16-58	0.6-2.0	0.12-0.20	4.5-6.0	Low----------	0.32	
	58-72	0.6-2.0	0.10-0.15	4.5-6.0	Low----------	0.24	
7----------	0-26	6.0-20	0.09-0.12	5.6-6.5	Low----------	0.17	5
Broseley	26-44	2.0-6.0	0.12-0.16	5.1-6.0	Low----------	0.24	
	44-72	2.0-20	0.08-0.14	5.1-6.0	Low----------	0.17	
8, 9----------	0-4	0.6-2.0	0.16-0.24	5.1-6.5	Low----------	0.43	3
Captina	4-20	0.6-2.0	0.16-0.24	4.5-5.5	Low----------	0.37	
	20-72	0.06-0.2	0.08-0.12	4.5-5.5	Low----------	0.32	
10, 11----------	0-16	2.0-6.0	0.07-0.12	4.5-5.0	Very low-------	0.24	2
Clarksville	16-40	2.0-6.0	0.06-0.10	4.5-5.0	Low----------	0.24	
	40-72	2.0-6.0	0.05-0.08	4.5-5.0	Low----------	0.24	
12----------	0-16	0.2-0.6	0.20-0.23	4.5-6.5	Low----------	0.43	4
Crowley	16-60	<0.06	0.19-0.21	4.5-6.5	High----------	0.32	
13, 14----------	0-16	2.0-6.0	0.08-0.15	4.5-6.5	Low----------	0.28	2
Doniphan	16-72	0.6-2.0	0.08-0.10	3.6-5.5	Moderate-------	0.28	
15*:							
Doniphan--------	0-16	2.0-6.0	0.08-0.15	4.5-6.5	Low----------	0.28	2
	16-72	0.6-2.0	0.08-0.10	3.6-5.5	Moderate-------	0.28	
Gepp----------	0-7	0.6-2.0	0.08-0.18	5.1-6.0	Low----------	0.28	4
	7-13	0.6-2.0	0.10-0.22	4.5-5.5	Low----------	0.28	
	13-72	0.6-2.0	0.08-0.18	4.5-6.0	Moderate-------	0.28	
16----------	0-4	0.6-2.0	0.15-0.20	4.5-6.0	Low----------	0.37	4
Dundee	4-40	0.2-0.6	0.15-0.20	4.5-6.0	Moderate-------	0.32	
	40-72	0.06-2.0	0.14-0.18	4.5-7.3	High----------	0.32	
17, 18----------	0-7	0.6-2.0	0.08-0.18	5.1-6.0	Low----------	0.28	4
Gepp	7-13	0.6-2.0	0.10-0.22	4.5-5.5	Low----------	0.28	
	13-72	0.6-2.0	0.08-0.18	4.5-6.0	Moderate-------	0.28	
19*:							
Gepp----------	0-7	0.6-2.0	0.08-0.18	5.1-6.0	Low----------	0.28	4
	7-13	0.6-2.0	0.10-0.22	4.5-5.5	Low----------	0.28	
	13-72	0.6-2.0	0.08-0.18	4.5-6.0	Moderate-------	0.28	
Doniphan--------	0-16	2.0-6.0	0.08-0.15	4.5-6.5	Low----------	0.28	2
	16-72	0.6-2.0	0.08-0.10	3.6-5.5	Moderate-------	0.28	

See footnote at end of table.

TABLE 14.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Soil name and map symbol	Depth	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors	
						K	T
	In	In/hr	In/in	pH			
20*, 21*:							
Gepp	0-7	0.6-2.0	0.08-0.18	5.1-6.0	Low	0.28	4
	7-13	0.6-2.0	0.10-0.22	4.5-5.5	Low	0.28	
	13-72	0.6-2.0	0.08-0.18	4.5-6.0	Moderate	0.28	
Ventris	0-5	0.6-2.0	0.12-0.20	5.6-7.3	Low	0.43	2
	5-32	<0.06	0.10-0.18	6.1-7.8	High	0.37	
	32-34	---	---	---	---	---	
22---------- Hontas	0-72	0.6-2.0	0.16-0.24	5.6-7.8	Low	0.37	5
23---------- Jackport	0-12	0.2-0.6	0.18-0.22	4.5-6.0	Moderate	0.43	5
	12-58	<0.06	0.12-0.18	4.5-5.5	High	0.32	
	58-72	<0.06	0.12-0.18	4.5-7.8	High	0.32	
24---------- Kobel	0-10	0.2-0.6	0.18-0.22	5.1-7.3	Moderate	0.43	5
	10-72	<0.06	0.12-0.22	6.1-8.4	Very high	0.37	
25, 26---------- Loring	0-8	0.6-2.0	0.20-0.23	4.5-6.0	Low	0.43	3
	8-24	0.6-2.0	0.20-0.22	4.5-6.0	Low	0.43	
	24-72	0.2-0.6	0.06-0.13	4.5-6.0	Low	0.43	
27---------- McCrory	0-19	0.6-2.0	0.11-0.15	4.5-7.3	Low	0.24	3
	19-28	0.2-0.6	0.11-0.17	5.1-7.3	Low	0.32	
	28-49	0.2-0.6	0.05-0.08	6.6-8.4	Low	0.49	
	49-72	0.6-2.0	0.03-0.08	6.6-8.4	Low	0.49	
28----------	0-8	2.0-6.0	0.11-0.15	4.5-6.0	Low	0.20	5
Patterson	8-34	2.0-6.0	0.12-0.16	4.5-5.5	Low	0.20	
	34-72	>6.0	0.06-0.10	4.5-5.5	Low	0.17	
29----------	0-5	0.6-2.0	0.16-0.24	4.5-6.0	Low	0.37	5
[redacted]							
30*.							

TABLE 15.--SOIL AND WATER FEATURES

[Absence of an entry indicates the feature is not a concern. See text for descriptions of symbols and such terms as "rare," "brief," and "perched." The symbol > means more than]

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness
					Ft			In	
1---------- Amagon	D	None--------	---	---	1.0-2.0	Perched	Dec-Apr	>60	---
2*:									
Arkana----------	C	None--------	---	---	>6.0	---	---	20-36	Hard
Rock outcrop.									
3---------- Ashton	B	Occasional--	Very brief	Dec-Jun	>6.0	---	---	>60	---
4---------- Bosket	B	None--------	---	---	>6.0	---	---	>60	---
5, 6---------- Brocket	C	None--------	---	---	>6.0	---	---	>60	---
7---------- Broseley	B	None--------	---	---	>6.0	---	---	>60	---
8, 9---------- Captina	C	None--------	---	---	2.0-3.0	Perched	Dec-Apr	40-72	Ripable
10, 11---------- Clarksville	B	None--------	---	---	>6.0	---	---	>60	---
12---------- Crowley	D	None--------	---	---	0.5-1.5	Perched	Dec-Apr	>60	---
13, 14---------- Doniphan	B	None--------	---	---	>6.0	---	---	>60	---
15*:									
Doniphan----------	B	None--------	---	---	>6.0	---	---	>60	---
Gepp----------	B	None--------	---	---	>6.0	---	---	>60	Hard
16---------- Dundee	C	None--------	---	---	1.5-3.5	Apparent	Jan-Apr	>60	---
17, 18---------- Gepp	B	None--------	---	---	>6.0	---	---	>60	Hard
19*:									
Gepp----------	B	None--------	---	---	>6.0	---	---	>60	Hard
Doniphan----------	B	None--------	---	---	>6.0	---	---	>60	---
20*, 21*:									
Gepp----------	B	None--------	---	---	>6.0	---	---	>60	Hard
Ventris----------	D	None--------	---	---	>6.0	---	---	24-40	Hard
22---------- Hontas	B	Frequent----	Very brief to brief.	Dec-Jun	2.0-2.5	Apparent	Dec-Apr	>60	---
23---------- Jackport	D	None--------	---	---	0-1.0	Perched	Dec-Apr	>60	---
24---------- Kobel	D	None--------	---	---	0-1.0	Perched	Dec-Apr	>60	---

See footnote at end of table.

TABLE 15.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table			Bedrock	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness
					Ft			In	
25, 26--Loring	C	None	---	---	2.0-3.0	Perched	Dec-Mar	>60	---
27--McCrory	D	None	---	---	0-1.0	Perched	Dec-Apr	>60	---
28--Patterson	C	None	---	---	0-1.0	Apparent	Dec-Apr	>60	---
29--Peridge	B	None	---	---	>6.0	---	---	>60	---
30*. Pits									
31--Razort	B	Frequent	Very brief to brief.	Jan-Apr	>6.0	---	---	>60	---
32*: Ventris	D	None	---	---	>6.0	---	---	24-40	Hard
Rock outcrop.									

* See map unit description for the composition and behavior of the map unit.

TABLE 16.--PHYSICAL ANALYSES OF SELECTED SOILS

Soil name and sample number	Depth	Horizon	Particle size distribution (less than 2.0 mm)					
			Sand				Silt (0.05-0.002 mm)	Clay (<0.002 mm)
			Very coarse to medium (2.0-0.25 mm)	Fine (0.25-0.10 mm)	Very fine (0.10-0.05 mm)	Total		
	In		Pct	Pct	Pct	Pct	Pct	Pct
Doniphan cherty silt loam:								
S74-AR-121-3-1	0-2	A1	12	6	5	23	68	9
S74-AR-121-3-2	2-9	A2	11	6	4	21	67	12
S74-AR-121-3-3	9-16	B1	8	4	4	16	67	17
S74-AR-121-3-4	16-32	B21t	6	3	3	12	41	47
S74-AR-121-3-5	32-47	B22t	6	4	4	14	30	56
S74-AR-121-3-5	47-60	B23t	1	0	2	3	15	82
S74-AR-121-3-6	60-72	B23t	0	1	1	2	18	80
Loring silt loam:								
S75-AR-121-2-1	0-4	Ap	1	1	2	4	84	12
S75-AR-121-2-2	4-8	B1	1	1	1	3	77	20
S75-AR-121-2-3	8-14	B21t	1	0	1	2	72	26
S75-AR-121-2-4	14-24	B22t	1	0	1	2	72	26
S75-AR-121-2-5	24-40	Bx1	1	0	1	2	71	27
S75-AR-121-2-6	40-56	Bx2	1	0	1	2	67	31

TABLE 17.--CHEMICAL ANALYSES OF SELECTED SOILS

Soil name and sample number	Depth	Horizon	Milliequivalents per 100 grams of soil--					Base saturation	Reaction 1:1 soil:water	Organic matter	Available phosphorus
			Extractable bases				Extractable acidity				
			Ca	Mg	Na	K					
	Inches							Percent	pH	Percent	Parts per million
Doniphan cherty silt loam:											
S74-AR-121-3-1----------	0-2	A1	3	1	0	0	8	33	5.2	3	8
S74-AR-121-3-2----------	2-9	A2	2	1	0	0	6	30	5.6	2	4
S74-AR-121-3-3----------	9-16	B1	2	1	0	0	6	30	5.6	1	2
S74-AR-121-3-4----------	16-32	B21t	1	3	0	0	15	24	5.1	1	1
S74-AR-121-3-5----------	32-47	B22t	1	2	0	0	19	17	4.9	0	1
S74-AR-121-3-6----------	47-60	B23t	1	1	0	0	23	11	4.8	0	1
S74-AR-121-3-7----------	60-72	B23t	1	1	0	0	20	10	4.7	0	2
Loring silt loam:											
S75-AR-121-2-1	0-4	Ap	1	1	0	0	10	11	4.5	2	4
S75-AR-121-2-2	4-8	B1	1	1	0	0	13	13	4.7	1	3
S75-AR-121-2-3	8-14	B21t	1	2	0	0	17	13	4.7	1	3
S75-AR-121-2-4	14-24	B22t	0	2	0	0	15	14	5.0	0	3
S75-AR-121-2-5	24-40	Bx1	1	4	0	0	15	24	5.0	0	3
S75-AR-121-2-6	40-56	Bx2	2	6	1	0	11	44	4.9	0	3

TABLE 18.--CLASSIFICATION OF THE SOILS

Soil name	Family or higher taxonomic class
Amagon	Fine-silty, mixed, thermic Typic Ochraqualfs
Arkana	Very-fine, mixed, mesic Mollic Hapludalfs
Ashton	Fine-silty, mixed, mesic Mollic Hapludalfs
Bosket	Fine-loamy, mixed, thermic Mollic Hapludalfs
Brocket	Fine-loamy, siliceous, mesic Typic Paleudults
Broseley	Loamy, mixed, thermic Arenic Hapludalfs
Captina	Fine-silty, mixed, mesic Typic Fragiudults
Clarksville	Loamy-skeletal, siliceous, mesic Typic Paleudults
Crowley	Fine, montmorillonitic, thermic Typic Albaqualfs
Doniphan	Clayey, mixed, mesic Typic Paleudults
Dundee	Fine-silty, mixed, thermic Aeric Ochraqualfs
Gepp	Very-fine, mixed, mesic Typic Paleudalfs
Hontas	Fine-silty, mixed, mesic Fluvaquentic Eutrochrepts
Jackport	Very-fine, montmorillonitic, thermic Vertic Ochraqualfs
Kobel	Fine, montmorillonitic, nonacid, thermic Vertic Haplaquepts
Loring	Fine-silty, mixed, thermic Typic Fragiudalfs
McCrory	Fine-loamy, mixed, thermic Albic Glossic Natraqualfs
Patterson	Coarse-loamy, mixed, thermic Aeric Ochraqualfs
Peridge	Fine-silty, mixed, mesic Typic Paleudalfs
Razort	Fine-loamy, mixed, mesic Mollic Hapludalfs
Ventris	Very-fine, mixed, mesic Albaquic Hapludalfs

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